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TEST REPORT

Kaden Construction Limited

CONTRACT NO. DC/2007/18

YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS

QUARTERLY EM&A SUMMARY REPORT NO.2

(SEPTEMBER TO NOVEMBER 2008)

Prepared by: _____
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Environmental Team Leader

Issue Date: 22 December 2008 *Report No.: ENA81306*

Scott Wilson CDM Joint Venture

Chief Engineer/Harbour Area Treatment Scheme
Drainage Services Department
5/F Western Magistracy
2A Pok Fu Lam Road
Hong Kong

Your reference:

Our reference: 05117/6/10/320355

Date: 24 December 2008

Attention: Mr C K Au

BY FAX ONLY

Dear Sir,

Agreement No. CE20/2005 (DS)
Outlying Islands Sewerage Stage 1 Phase 1 Part 2 and Phase 2
Yung Shue Wan and Sok Kwu Wan Sewerage, Sewage Treatment and Disposal – Design and Construction
Quarterly EM&A Summary Report No. 2 (September to November 2008)

I refer to the Environmental Permit (EP-281/2007) and the email from the environmental team, ETS-Testconsult Limited with the revised report, dated 24 December 2008. I do not have further comment and have verified the captioned report.

Yours faithfully
SCOTT WILSON LTD

Rodney Ip

ANCP/ancp

cc	Kaden Construction Ltd	(Attn: Mr Stephen Leung)
	ETS-Testconsult	(Attn: Ms Linda Law)
	ER/LAMMA	(Attn: Mr Alfred Cheung)
	CDM	(Attn: Mr Mark Sin)

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TABLE OF CONTENTS

		Page
EXECUTIVE SUMMARY		
1.0	**INTRODUCTION**	1
2.0	**PROJECT INFORMATION**	1
	2.1 Background	1
	2.2 Site Description	1
	2.3 Construction Programme	1
	2.4 Project Organization and Management Structure	1
	2.5 Contact Details of Key Personnel	1 – 2
	2.6 Construction Progress in this reporting month	2
3.0	**SUMMARY OF EM&A REQUIREMENTS**	
	3.1 EM&A Programme	2
	3.2 Monitoring Stations and Parameters	2
	3.3 Monitoring Methodology and Calibration Details	2
	3.4 Environmental Quality Performance Limits (Action/Limit Levels)	2
	3.5 Environmental Mitigation Measures	2
4.0	**MONITORING RESULTS**	
	4.1 Air Quality	2 – 3
	4.2 Noise	3
5.0	**INSPECTION RESULTS**	
	5.1 Summary of site inspection findings and Action(s) taken by Kaden and ET in this quarter	3 – 5
	5.2 Implementation Status of Environmental Mitigation Measures	6
	5.3 Status of Environmental Licensing and Permitting	6
	5.4 Advice on Solids and Liquid Waste Management Status	6 – 7
6.0	**NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS**	
	6.1 Summary of Non-compliance	7
	6.2 Review of the Reasons for and the Implications of Non-compliance	7
	6.3 Summary of Actions Taken	7
	6.4 Summary of Environmental Complaint, Notification of Summons and Successful Prosecutions Handling	7 – 8
7.0	**COMMENTS, CONCLUSION AND RECOMENDATION**	8

APPENDIX

A	Organization Chart and Lines of Communication
B1	Impact Air Quality Monitoring Results in this Quarter
B2	Graphical Plots of Impact Air Quality Monitoring Data in this Quarter
C1	Impact Noise Monitoring Results in this Quarter
C2	Graphical Plots of Impact Noise Monitoring Data in this Quarter
D	Environmental Quality Performance (Action / Limit Levels)
E	Event-Action Plans
F	Construction Programme
G	Summary of Implementation Status of Mitigation Measures during Site Inspection

Figures

2005/C1/2004 Village Sewerage Layout Plans – Sok Kwu Wan (Sheet 1 of 3)
2005/C1/2005 Village Sewerage Layout Plans – Sok Kwu Wan (Sheet 2 of 3)
2005/C1/2006 Village Sewerage Layout Plans – Sok Kwu Wan (Sheet 3 of 3)

Tables

2.1 Contact Details of Key Personnel
4.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Monitoring
4.2 Summary of Impact Monitoring results of Noise Daytime Monitoring
5.1 Summary of Site Inspection Findings and Action(s) taken by Kaden and ET
5.2 Summary of environmental licensing and permit status
5.3 Offsite Waste Disposal in this Quarter

EXECUTIVE SUMMARY

This is the second Quarterly Environmental Monitoring and Audit (EM&A) Summary Report prepared by ETS-Testconsult Ltd (ET) for the"Contract No. DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" (the Project) under the requirements and specifications of "the Environmental Permit (Application No. AEP-281/2007)" (the EP) and "the Final EM&A Manual – Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" (the EM&A Manual).

This report documents the findings of EM&A Works conducted during the construction phase of the Project from September to November 2008.

Construction Progress

The major construction works in this quarter were as below:

September 2008	• *Installation of drain pipe* • *Construction of manhole* • *Trenchless works*
October 2008	• *Excavation work for installation of sewer pipe* • *Construction of manhole*
November 2008	• *Installation of sewer pipe* • *Construction of manhole*

Environmental Monitoring Progress

The summary of the monitoring activities in this quarter is listed below:

- *Noise Monitoring (Day-time): 13 Occasions at 4 designated locations;*
- *24-hour TSP Monitoring: 16 Occasions at 3 designated locations;*
- *1-hour TSP Monitoring: 48 Occasions at 3 designated locations.*

Impact Air Quality Monitoring

No exceedances of Action and Limit levels were recorded for 24-hr and 1-hr TSP monitoring in the quarter.

Impact Noise Monitoring

One exceedance of Action Level was recorded in this reporting month since one complaint on noise issue was received on 15 October 2008. The details of the complaint refer to Section 6.4.

Environmental Complaints, Notifications of Summons and Successful Prosecutions

In this quarter, a complaint received on 17 October 2008 through email by the RE was from the owner of House 14 on 15 October 2008 about noise generated from the concrete pavement breaking works carried out at the adjacent to the house in the morning of that day. Details of the complaint are presented in Section 6.4.

No notifications of summons and successful prosecutions were received in this quarter.

Internet Website

This Quarterly EM&A Summary Report can be accessed on the web at http://www.skwsewer.com..

1.0 INTRODUCTION

The Customer, Kaden Construction Limited (Kaden), appointed Environmental Team of ETS-Testconsult Limited to undertake the environmental impact monitoring for "Contract No. DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" (the Project) under the requirements and specifications of "the Environmental Permit (Application No. AEP-281/2007)" (the EP) and "the Final EM&A Manual – Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" (the EM&A Manual).

This Quarterly EM&A Summary Report documented the findings of EM&A Works conducted during the construction phase of the Project in September, October and November 2008.

2.0 PROJECT INFORMATION

2.1 Background

Under this Project, Kaden is required to construct village sewerage in Yung Shue Wan and Sok Kwu Wan, Lamma Island.

Village sewage works are undertaken in this Project. These will comprise laying approximately 1.4km of sewerage pipes from 220mm to 350mm diameter in Sok Kwu Wan Village. These works are carried out under a conventional Design, Bid, Build (DBB) contract, entirely separate from the single Design, Build and Operate (DBO) contract for Sewage Treatment Works (STW) construction.

As the main Contractor of the captioned project contracted by, Kaden will follow the environmental monitoring recommendation stated in the EM&A Manual that was prepared with reference to the EIA Report (Register No.: AEIAR-075/2003).

According to the EP and the EM&A Manual, the environmental programme is mainly focused on the construction activities of this Project in Sok Kwu Wan. At the same time, all air quality and noise monitoring stations proposed in the EM&A Manual are located in Sok Kwu Wan. The baseline report is prepared in accordance with EP (No. EP-281/2007) for the Designated Project "Outlying Islands Sewerage Stage 1 Phase 2 – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" and the EM&A Manual.

2.2 Site Description

The general layout plan of the project in Sok Kwu Wan is shown in Drawing No. 2005/C1/2004, 2005/C1/2005 and 2005/C1/2006.

Surrounding the construction site, there are air and noise sensitive receivers at Chung Mei Village, Sok Kwu Wan and Ta Shui Wan.

2.3 Construction Programme

The construction programme is shown in Appendix F.

2.4 Project Organization and Management Structure

The organization chart with respect to the on-site environmental management and monitoring program are shown in Appendix A.

2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	*Project Role*	*Key Staff*	*Tel. No.*	*Fax No.*
Scott Wilson CDM JV	*Engineer Representative*	*Ir Ian J Jones*	*2982 0240*	*2982 4129*
Scott Wilson CDM JV	*Independent Environmental Checker*	*Mr. Rodney Ip*	*2410 3750*	*2428 9922*
Kaden Construction Ltd	*Contractor*	*Ir Stephen Leung*	*2454 9102*	*2465 1207*
ETS-Testconsult Ltd	*Environmental Team*	*Mr. C L Lau*	*2946 7791*	*2695 3944*

3.0 SUMMARY OF EM&A REQUIREMENTS

3.1 EM&A Programme

In accordance with Section 5 of the EP, EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of air quality and noise are required for the Project. The EM&A requirement for each parameter are described in details in subsequent sections, including:

- *All monitoring parameters;*
- *Action and Limit levels for all environmental parameters;*
- *Event-Action Plans;*
- *Environmental mitigation measures, as recommended in the project EIA study report;*
- *Environmental requirements in contract documents.*

The implementation status of environmental mitigation measures is summarized in Section 5.2 of the Report.

3.2 Monitoring Stations and Parameters

The EM&A Manual designates several locations to monitor environmental impacts in terms of air quality and noise due to the Project. The description and detailed locations of monitoring stations for air quality and noise are shown in Figures 2005/C1/2004, 2005/C1/2005 and 2005/C1/2006 and relevant sections of this Report.

3.3 Monitoring Methodology and Calibration Details

All monitoring works were conducted and monitoring equipment was calibrated in accordance with the EM&A Manual.

3.4 Environmental Quality Performance Limits (Action/Limit Levels)

The environmental quality performance limits, i.e. Action/Limit Levels (AL Levels) were derived from the baseline monitoring results. If the measured environmental quality parameters exceed the AL Levels, the respective action plan will be implemented. The AL Levels for each monitoring parameter are given in Appendix D. The event action plan is given in Appendix E.

3.5 Environmental Mitigation Measures

Relevant mitigation measures were recommended in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in Appendix G.

4.0 MONITORING RESULTS

4.1 Air Quality

In accordance with the EM&A Manual, 1-hr and 24-hr TSP air quality monitoring are to be conducted three times and one time per six days correspondingly. In the reporting quarter, all the 1-hr and 24-hr TSP monitoring results complied with the AL Levels. The monitoring trends of air quality during the reporting quarter are given in Appendix B2.

Major dust sources in the Project were excavation works and vehicle used for moving sand, aggregates and construction waste.

Table 4.1 presents the number of exceedances recorded in each month of the reporting quarter.

Table 4.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Monitoring

Monitoring Parameter	*Level of Exceedance*	*September 2008*	*October 2008*	*November 2008*
24-hr TSP	*No of monitoring events*	*5*	*6*	*5*
	Action Level	*0*	*0*	*0*
	Limit Level	*0*	*0*	*0*
	Total	*0*	*0*	*0*
1-hr TSP	*No of monitoring events*	*15*	*18*	*15*
	Action Level	*0*	*0*	*0*
	Limit Level	*0*	*0*	*0*
	Total	*0*	*0*	*0*

4.2 Noise

Noise monitoring is required to be conducted at least once per week. Only daytime noise was monitored in the reporting quarter. All recorded noise levels complied with the AL Levels. The registered noise levels in the past three months are plotted in Appendix C2.

Table 4.2 presents the number of exceedances recorded in each month of the reporting quarter.

Table 4.2 Summary of Impact Monitoring results of Noise Daytime Monitoring

Level of Exceedance	*September 2008*	*October 2008*	*November 2008*
No of monitoring events	*4*	*5*	*4*
Action Level	*0*	*1*	*0*
Limit Level	*0*	*0*	*0*
Total	*0*	*1*	*0*

The major noise sources in the reporting quarter were excavation works and vehicle used for moving sand, aggregates and construction waste near the site egress.

In this quarter, one exceedance of Action Level was recorded in this reporting month since one complaint on noise issue was received on 15 October 2008. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring.

5.0 INSPECTION RESULTS

5.1 Summary of site inspection findings and Action(s) taken by Kaden and ET in this quarter

ET conducted weekly site inspections to monitor the Contractor's implementation of environmental mitigation measures. After each site inspection, the Contractor was notified of ET's observations and recommendations and then the Contractor will arrange related remedial works.

Summary of the site inspection findings in this reporting month is shown in Table 5.1.

Table 5.1 Summary of Site Inspection Findings and Action(s) taken by Kaden and ET

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
September 2008				
1	Air and Site Practice	Follow up action to the outstanding finding in the previous month, stockpiles of fill materials were found covered properly at S160. Area 2B and S51 during the weekly site inspection on 03/09/08.	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved, no further verification is required to be taken by ET.
2	Air	During the weekly site inspection on 16/09/08, a vehicle contained fill materials was noted without cover when leaving the site.	The Contractor replied to cover the vehicle with tarpaulin sheet when leaving the site.	During the next weekly site inspection, no vehicle was noted leaving the site without cover and hence no further ET verification was required.
3	Water	Follow up action to the outstanding finding in the previous month, stagnant water was observed accumulated at S56 near Chung Mei Village during the weekly site inspections on 03/09/08, 09/09/08 and 16/09/08.	The Contractor replied to drain the stagnant water or apply pesticide to avoid mosquito breeding.	During the last weekly site inspection on 22/09/08, no stagnant water was noted at S56 and hence no further ET verification was required.
4	Chemical	Two oil containers were found on the ground at SKW Playground without drip tray during the weekly site inspection on 03/09/08.	The Contractor replied to collect and store/dispose the containers properly.	During the subsequent weekly site inspection on 09/09/08, no oil containers were found at SKW Playground and hence no further ET verification was required.
5	Chemical	Oil leakage was noted from a generator at S56 near Chung Mei Tsuen during the weekly site inspection on 22/09/08.	The Contractor replied to clean up the contaminated soil as chemical waste, provide an appropriate drip tray for the generator and stop to use the defect generator and repair it as soon as possible.	Since the finding was recorded at the last weekly site inspection, it will be verified in the coming month.
October 2008				
1	Air	Excavated materials were stockpiled outside the manholes near works area S39, S167 and S56, and storage area beside S51 during the weekly site inspection on 02/10/08.	The Contractor replied to cover the excavated materials when not in use.	During the subsequent weekly site inspection on 08/10/08, the excavated materials were covered and hence no further verification is required to be taken by ET.
2	Air	Stockpile at S51 was found without cover during the weekly site inspections on 20/10/08 and 30/10/08.	The Contractor replied to cover all stockpiles.	Since the finding was still observed at the last weekly site inspection, it will be verified in the coming month.
3	Water	Export pipeline at S147 was found leaking during the weekly site inspection on 20/10/08.	The Contractor replied to repair and maintain all pipeline properly to avoid any leakage.	During the subsequent weekly site inspection on 30/10/08, no pipeline was noted at S147.

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
October 2008				
4	Chemical	Follow up action to the outstanding finding in the previous month, oil stain was cleaned up during weekly site inspection on 02/10/08.	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved, no further verification is required to be taken by ET.
5	Chemical	Oil leakage was noted from a defect excavator at storage area W2B during the weekly site inspection on 02/10/08.	The Contractor replied to repair and maintain all excavators properly to avoid oil leakage.	The defect excavator was found removed during the weekly site inspection 20/10/08.
6	Chemical	A generator at S56 was found without drip tray during the weekly site inspection on 08/10/08.	The Contractor replied to provide drip tray for all generators.	During the subsequent weekly site inspection on 14/10/08, drip tray was found provided for the generator.
7	Chemical	Oil stain was noted under a working excavator in front of 袁園 during the weekly site inspection on 14/10/08.	The Contractor replied to clean up the oil stain and repair the defect excavator.	During the subsequent weekly site inspection on 20/10/08, no oil stain was noted and the excavator was removed for repairing.
8	Chemical	Two chemical containers were noted at S148 without drip tray during the weekly site inspection on 20/10/08.	The Contractor replied to provide drip trays for all chemicals.	During the subsequent weekly site inspection on 30/10/08, the chemicals were removed.
November 2008				
1	Air	Follow up action to the outstanding finding in the previous month, stockpile at S51 was found covered during the weekly site inspection on 11/11/08	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved, no further verification was required to be taken by ET.
2	Water	Debris and unused materials were found disposed of in the channel adjacent to the "Police Port" during the weekly site inspections on 05/11/08 and 11/11/08.	The Contractor replied to clean up the debris and unused materials in the channel immediately.	During the weekly site inspection on 17/11/08, the debris and unused materials were cleaned up and hence no further verification was required to be taken by ET.
3	Water	Stagnant water was noted inside the manhole at S147 and S60 during the weekly site inspection on 17/11/08.	The Contractor replied to apply insecticide to avoid mosquito breeding.	During the subsequent weekly site inspection on 27/11/08, insecticide was applied and hence no further verification was required.
4	Chemical	Some chemical oil tanks at storage area were found without drip tray and labels during the weekly site inspection on 17/11/08.	The Contractor replied to provide drip trays and labels for all chemicals.	During the next weekly site inspection on 27/11/08, appropriated drip tray and labels were provided.
5	Site Practice	Debris and rubbish were noted at the coastal area near Chung Mei during weekly site inspection on 17/11/08.	The Contractor replied to collect the rubbish immediately.	During the subsequent weekly site inspection on 27/11/08, no rubbish was observed.
6	Site Practice	Four gas cylinders were placed in the storage area improperly during the site inspection on 17/11/08.	The Contractor replied to store them in appropriate area properly especially when not in use.	During the subsequent weekly site inspection on 27/11/08, the gas cylinders were found store properly.

5.2 Implementation Status of Environmental Mitigation Measures

According to the summary of the weekly site inspections carried out in this quarter, it indicated that site practices of the Kaden were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory.

Excavation works and vehicle used for moving sand, aggregates and construction waste were the major dust sources in the Project. Generally, the Contractor implemented adequate dust mitigation measures in this quarter, such as dampening of unpaved areas and fill material prior to handling or delivery and well maintenance of plant and equipment to avoid black smoke emission.

Vehicle traffic and construction activities near the site egress were the major noise sources. The powered mechanical equipment were generally operated and maintained properly.

5.3 Status of Environmental Licensing and Permitting

The status of licences and permits is summarized in Table 5.2.

Table 5.2 Summary of environmental licensing and permit status

Description	*Permit No.*	*Valid Period*		*Section*
		From	*To*	
Environmental Permit	*EP-281/2007*	*29/06/07*	*End of Project*	*Valid*
Water Discharge Licence	*EP890/W2/XD 026*	*23/05/08*	*31/03/12*	*Valid* *Discharge of Industrial Trade Effluent arising from Construction Site to communal storm water drain*
Notification under APCO	*Application had been submitted to EPD on 15 April 2008*			

5.4 Advice on Solids and Liquid Waste Management Status

The Contractor usually disposed of non-inert wastes such as general refuses and materials segregated to Sok Kwu Wan Re-fill Transfer Station (SKWRTS).

Table 5.3 summarizes data on offsite waste disposal in this quarter.

Table 5.3 Offsite Waste Disposal in this Quarter

Type of Waste		*Quantity*	*Disposal Location*	*Cumulative Quantity*
Inert C&D Materials	*Total Quantity Generated (tonne)*	*83*		*405*
	Broken Concrete (tonne)	*0*	*N/A*	*0*
	Reused in the Contract (tonne)	*40*	*For Stockpile / Reuse*	*90*
	Reused in other Projects (tonne)	*0*	*N/A*	*180*
	Disposal as Public Fill (tonne)	*42*	*SKWRTS*	*135*
C&D Waste	*Metals (1000kg)*	*0*	*N/A*	*0*
	Paper/Cardboard Packaging (1000kg)	*0*	*N/A*	*0*
	Plastics (1000kg)	*0*	*N/A*	*0*
	Chemical Waste (1000kg)	*0*	*N/A*	*0*
	Other, e.g. General Refuse (tonne)	*0*	*SKWRTS*	*1.34*

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system and desilting facilities. Moreover, the Contractor should apply approved pesticides in the stagnant water ponds.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste. All the trip tickets for chemical waste disposal were properly kept in the site office. No chemical waste disposal was undertaken in the reporting month.

All the runoff should be pumped to the desilting facilities to remove suspended solids prior to discharge.

6.0 NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

6.1 Summary of Non-compliance

No exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting period.

One exceedance of Action Level of noise monitoring was recorded in this reporting month since one complaint on noise issue was received on 15 October 2008. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring..

No evening-time, night-time and holiday noise monitoring were required since no construction works were processed during these periods.

6.2 Review of the Reasons for and the Implications of Non-compliance

The reasons and details of the complaint / exceedance on noise issue reported on 15 October 2008 are present in Section 6.4

6.3 Summary of Actions Taken

Due to the complaint, a complaint investigation was carried out on site by the RE, IEC, ET and Kaden on 20 October 2008. A complaint investigation report was prepared by ET and submit to RE, IEC and Kaden.

6.4 Summary of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

In this quarter, a complaint was received on 17 October 2008 through email by the RE from the owner of House 14 on 15 October 2008 about noise generated from the concrete pavement breaking works carried out at the adjacent to the house in the morning of that day.

After the discussion of the complaint in SSEMC meeting with the RE, ET and Kaden on 17 October 2008, it concluded that the complaint was valid and due to the works. Refer to the EM&A Manual, more mitigation measures was required to be taken by Kaden immediately to minimize noise nuisance to the public.

During the complaint investigation hold by RE, IEC, ET and Kaden on 20 October 2008, no concrete breaking work was observed near House 14 and no other noise impact was noted generated from the construction activities. However, RE, IEC and ET still reminded Kaden to provide appropriate mitigation measures, such as using noise barrier and well planning in works schedule, to minimize noise nuisance to the public. Kaden agreed to rearrange the time such as working in the afternoon for the concrete breaking works and provide movable barriers for the concrete breaking works in order to minimize noise nuisance.

No complaint was received subsequent to the implementation of mitigation measures by Kaden. Hence, it was believed that Kaden have provided appropriate measures to mitigate the problem.

No notifications of summons and successful prosecutions were received in this quarter.

A summary of environmental complaints and prosecutions was given in Table 6.1.

Table 6.1 Summary of Environmental Complaints and Prosecutions

Period	Complaints logged	Summon served	Successful Prosecution
September 2008	0	0	0
October 2008	1	0	0
November 2008	0	0	0
Cumulative	1	0	0

7.0 COMMENTS, CONCLUSIONS AND RECOMMENDATION

This report presents the second quarter of the Project. Major site activities were excavation and pipe-laying works. Noise and air quality were the major environmental issues in the Project. Generally, the Contractor implemented most of the mitigation measures to minimize the dust impact.

No exceedances of Action and Limit Level of air quality and noise monitoring were recorded in this quarter.

No notification of summons and prosecutions with respect to environmental issues were received in this quarter.

One complaint was received in this reporting month. Details of the complaint are presented in Section 6.4.

According to the ET weekly site inspections carried out in this quarter, it was indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was up to standard. The Contractor generally implemented sufficient dust mitigation measures.

According to the environmental site inspections performed in this quarter, the following recommendations were provided:

Air Quality

- Ensure the frequency of water spraying on unpaved/unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Undertake water spraying on stockpiling area;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit; and
- Implement the dust mitigation measures for the construction activities.

Noise

- Conduct noisy activities at a farther location from the NSRs.

Water Quality

- Provide proper treatment for the wastewater discharged; and
- Remove the stagnant water or provide pesticide for the stagnant water in the permanent desilting chambers, if any.

Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping; and
- Avoid oil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

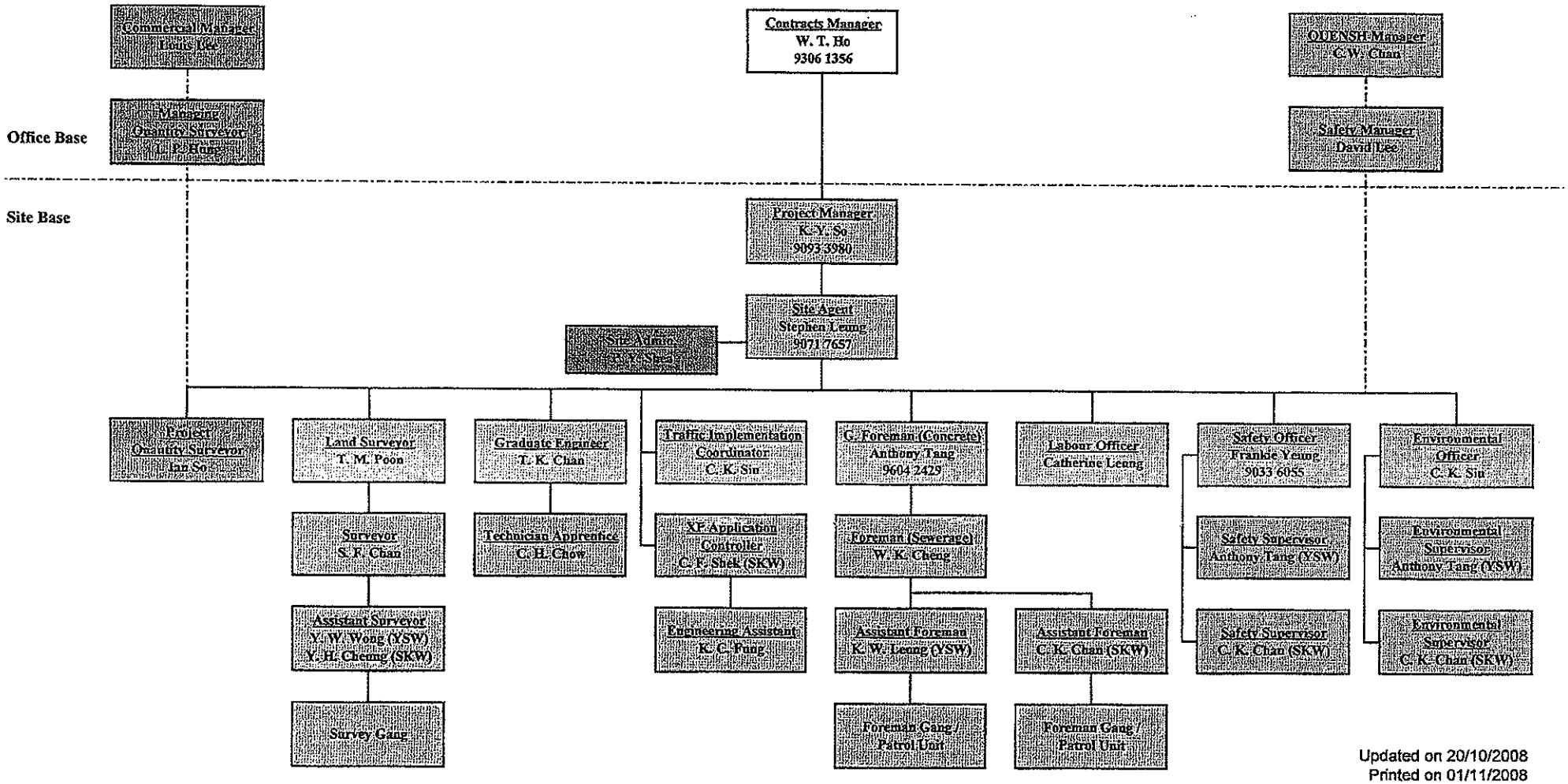
Appendix A

Organization Chart and Lines of Communication

Kaden Construction Limited

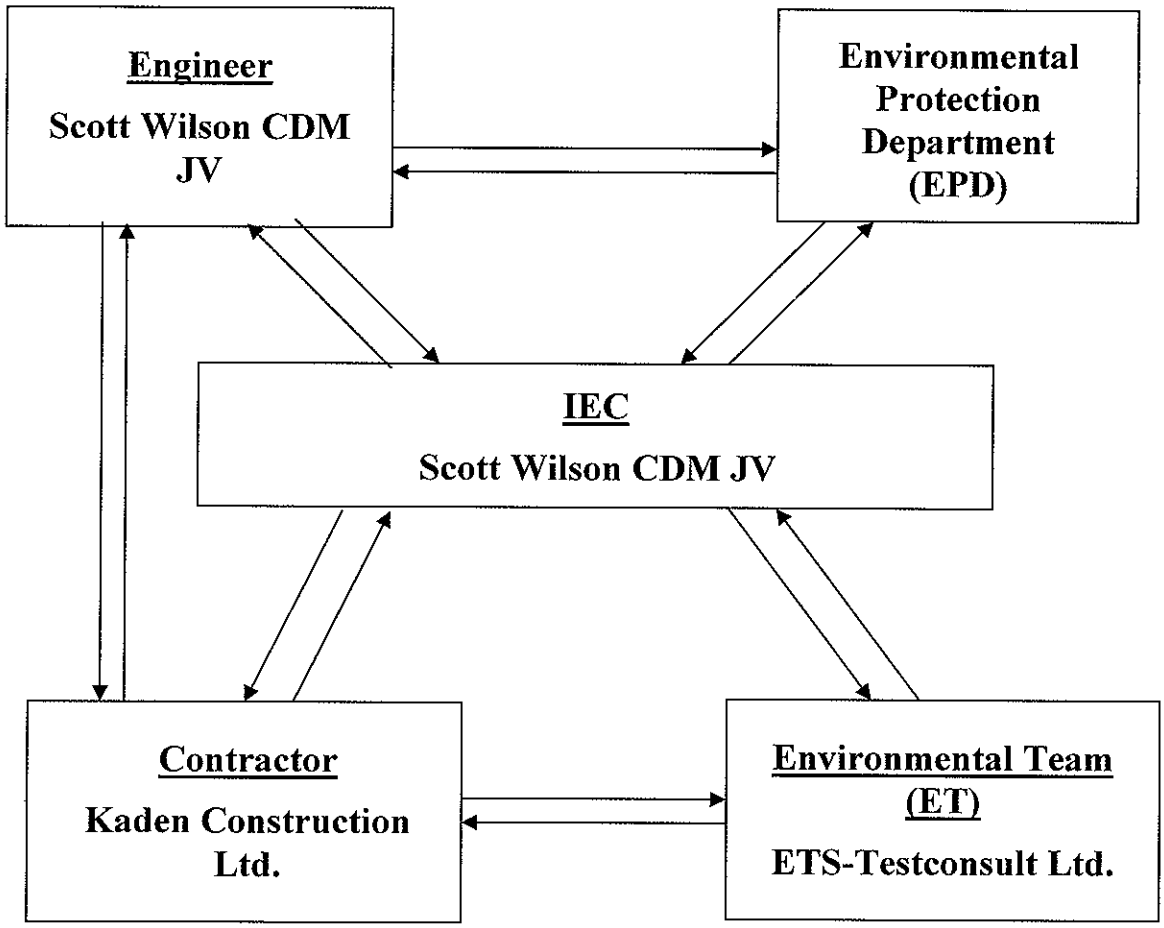
DSD Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works

Project Organisation Chart (Rev. E)



Updated on 20/10/2008
Printed on 01/11/2008

Lines of Communication



Appendix B1

Impact Air Quality Monitoring Results in this Quarter

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1

Start		Finish		Elapse Time		Sampling	Flow Rate (m^3/min.)		Average	Filter Weight (g)		Conc.	Weather
Date	Time	Date	Time	Initial	Final	Time (hrs)	Initial	Final	(m^3/min.)	Initial	Final	($\mu g/m^3$)	Condition
03/09/08	11:46	04/09/08	11:46	13079.25	13103.25	24.00	1.0387	1.0387	1.0387	2.7383	2.7765	26	Drizzle
09/09/08	13:00	10/09/08	12:59	13103.25	13127.24	23.99	1.0887	1.0887	1.0887	2.7848	2.8396	35	Sunny
16/09/08	13:00	17/09/08	13:00	13127.24	12151.24	24.00	1.0637	1.0637	1.0387	2.7830	2.8787	64	Sunny
22/09/08	11:46	23/09/08	11:46	13151.24	13175.24	24.00	1.0387	1.0387	1.0387	2.8060	2.9830	118	Cloudy
26/09/08	12:11	27/09/08	12:11	13175.24	13199.24	24.00	1.0887	1.0887	1.0887	2.8169	2.8688	33	Sunny
02/10/08	12:46	03/10/08	12:47	13199.24	13223.25	24.01	1.0887	1.0887	1.0887	2.7415	2.8575	74	Fine
08/10/08	11:28	09/10/08	11:28	13223.25	12347.25	24.00	0.9387	0.9387	0.9387	2.7790	2.8498	52	Fine
14/10/08	13:20	15/10/08	13:20	13247.25	12371.25	24.00	1.1017	1.1017	1.1017	2.7847	2.8797	60	Fine
20/10/08	13:20	21/10/08	13:20	13271.25	13295.25	24.00	1.1017	1.1017	1.1017	2.7145	2.8466	83	Sunny
24/10/08	13:20	25/10/08	13:20	13295.25	13319.25	24.00	0.8021	0.8021	0.8021	2.7616	2.8365	65	Fine
30/10/08	13:20	31/10/08	13:20	13319.25	13343.25	24.00	0.9519	0.9519	0.9519	2.7471	2.8343	64	Fine
05/11/08	11:20	06/11/08	11:20	13343.25	13367.25	24.00	1.0268	1.0268	1.0268	2.7759	2.8405	44	Cloudy
11/11/08	13:20	12/11/08	13:20	13367.25	13391.25	24.00	1.0768	1.0768	1.0768	2.7512	2.8495	63	Fine
17/11/08	11:05	18/11/08	11:05	13391.25	13415.25	24.00	1.0518	1.0518	1.0518	2.7418	2.9875	162	Fine
21/11/08	14:56	22/11/08	14:56	13415.25	13439.25	24.00	1.0518	1.0518	1.0518	2.7499	2.9719	147	Sunny
27/11/08	13:00	28/11/08	13:01	13439.25	13463.26	24.01	1.1767	1.1767	1.1767	2.7353	3.0122	163	Sunny

Monitoring Station : AM2

Start		Finish		Elapse Time		Sampling	Flow Rate (m^3/min.)		Average	Filter Weight (g)		Conc.	Weather
Date	Time	Date	Time	Initial	Final	Time (hrs)	Initial	Final	(m^3/min.)	Initial	Final	($\mu g/m^3$)	Condition
03/09/08	12:16	04/09/08	12:16	17115.01	17139.01	24.00	1.1056	1.1056	1.1056	2.7797	2.8155	22	Drizzle
09/09/08	13:00	10/09/08	13:00	17139.01	17163.01	24.00	1.1980	1.1980	1.1980	2.7576	2.8187	35	Sunny
16/09/08	13:00	17/09/08	13:00	17163.01	17187.01	24.00	1.1672	1.1672	1.1672	2.7846	2.8851	60	Sunny
22/09/08	11:53	23/09/08	11:53	17187.01	17211.01	24.00	1.0748	1.0748	1.0748	2.7951	2.9825	121	Cloudy
26/09/08	11:58	27/09/08	11:58	17211.01	17235.01	24.00	1.1672	1.1672	1.1672	2.7988	2.8873	53	Sunny
02/10/08	12:49	03/10/08	12:49	17235.01	17259.01	24.00	1.1980	1.1980	1.1980	2.7542	2.9020	86	Fine
08/10/08	11:19	09/10/08	11:20	17259.01	17283.02	24.01	1.1980	1.1980	1.1980	2.7839	2.8815	57	Fine
14/10/08	13:20	15/10/08	13:20	17283.02	17307.02	24.00	1.2666	1.2666	1.2666	2.7853	2.8891	57	Fine
20/10/08	13:20	21/10/08	13:20	17307.02	17331.02	24.00	1.2051	1.2051	1.2051	2.7518	2.8685	67	Sunny
24/10/08	13:20	25/10/08	13:20	17331.02	17355.02	24.00	1.0514	1.0514	1.0514	2.7501	2.8738	82	Fine
30/10/08	13:20	31/10/08	13:20	17355.02	17379.02	24.00	1.1744	1.1744	1.1744	2.7626	2.8628	59	Fine
05/11/08	11:11	06/11/08	11:11	17379.02	17403.02	24.00	1.1436	1.1436	1.1436	2.7926	2.8584	40	Cloudy
11/11/08	13:20	12/11/08	13:20	17403.02	17427.02	24.00	1.2666	1.2666	1.2666	2.7461	2.8601	63	Fine
17/11/08	11:12	18/11/08	11:12	17427.03	17451.03	24.00	1.0514	1.0514	1.0514	2.7689	2.9608	127	Fine
21/11/08	15:00	22/11/08	15:00	17451.03	17475.03	24.00	1.1364	1.1364	1.1364	2.7461	2.8808	82	Sunny
27/11/08	13:00	28/11/08	13:00	17475.03	17499.03	24.00	1.1129	1.1129	1.1129	2.7635	2.9364	108	Sunny

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM3

Start		Finish		Elapse Time		Sampling	Flow Rate (m^3/min.)		Average	Filter Weight (g)		Conc.	Weather
Date	Time	Date	Time	Initial	Final	Time (hrs)	Initial	Final	(m^3/min.)	Initial	Final	(μg/m^3)	Condition
03/09/08	11:10	04/09/08	11:10	1175.49	1199.49	24.00	1.2094	1.2094	1.2094	2.7476	2.7788	18	Drizzle
09/09/08	13:00	10/09/08	13:00	1199.49	1223.49	24.00	1.1773	1.1773	1.1773	2.8013	2.8555	32	Sunny
16/09/08	13:00	17/09/08	13:00	1223.49	1247.49	24.00	1.2736	1.3057	1.2897	2.7760	2.9225	79	Sunny
22/09/08	11:15	23/09/08	11:15	1247.49	1271.49	24.00	1.1452	1.1452	1.1452	2.7665	3.0712	185	Cloudy
26/09/08	12:50	27/09/08	12:50	1271.49	1295.49	24.00	1.2094	1.2094	1.2094	2.7707	2.9165	84	Sunny
02/10/08	13:03	03/10/08	13:03	1295.49	1319.49	24.00	1.3057	1.3057	1.3057	2.7891	3.0571	143	Fine
08/10/08	11:09	09/10/08	11:10	1319.49	1343.50	24.01	1.2415	1.2415	1.2415	2.7999	3.0278	127	Fine
14/10/08	16:20	15/10/08	16:20	1343.50	1367.50	24.00	1.3704	1.3704	1.3704	2.8035	2.9630	81	Fine
20/10/08	16:00	21/10/08	16:00	1367.50	1391.50	24.00	1.3704	1.3704	1.3704	2.7503	2.9015	77	Sunny
24/10/08	16:10	25/10/08	16:11	1391.50	1415.51	24.01	1.3704	1.3704	1.3704	2.7603	3.0749	159	Fine
30/10/08	16:10	31/10/08	16:10	1415.51	1439.51	24.00	1.2767	1.2767	1.2767	2.7469	2.9052	86	Fine
05/11/08	10:17	06/11/08	10:17	1439.51	1463.51	24.00	1.0894	1.0894	1.0894	2.7508	2.8465	61	Cloudy
11/11/08	16:05	12/11/08	16:05	1463.51	1487.51	24.00	1.0894	1.0894	1.0894	2.7807	3.0561	176	Fine
17/11/08	09:16	18/11/08	09:16	1487.51	1511.51	24.00	1.0894	1.0894	1.0894	2.7786	2.9645	119	Fine
21/11/08	14:35	22/11/08	14:35	1511.51	1535.51	24.00	1.1452	1.1452	1.1452	2.7458	2.9028	95	Sunny
27/11/08	16:00	28/11/08	16:01	1535.51	1559.52	24.01	1.3079	1.3079	1.3079	2.7745	2.9604	99	Sunny

Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
03/09/08	08:45	09:45	62	388	82	Drizzle
03/09/08	09:45	10:45	54	330	71	Drizzle
03/09/08	10:45	11:45	65	426	93	Drizzle
09/09/08	09:20	10:20	121	527	190	Sunny
09/09/08	10:20	11:20	105	565	174	Sunny
09/09/08	11:20	12:20	111	486	181	Sunny
16/09/08	09:16	10:16	101	422	145	Sunny
16/09/08	10:16	11:16	97	489	141	Sunny
16/09/08	11:16	12:16	105	407	135	Sunny
22/09/08	13:00	14:00	66	384	160	Cloudy
22/09/08	14:00	15:00	75	425	174	Cloudy
22/09/08	15:00	16:00	69	407	164	Cloudy
26/09/08	08:50	09:50	54	407	163	Sunny
26/09/08	09:50	10:50	73	488	198	Sunny
26/09/08	10:50	11:50	72	453	184	Sunny
02/10/08	08:15	09:15	38	408	96	Fine
02/10/08	09:15	10:15	35	385	82	Fine
02/10/08	10:15	11:15	34	378	76	Fine
08/10/08	13:30	14:30	54	323	165	Cloudy
08/10/08	14:30	15:30	62	422	216	Cloudy
08/10/08	15:30	16:30	73	317	191	Cloudy
14/10/08	09:30	10:30	72	397	154	Sunny
14/10/08	10:30	11:30	68	406	144	Sunny
14/10/08	11:30	12:30	65	297	146	Sunny
20/10/08	09:11	10:11	79	472	157	Sunny
20/10/08	10:11	11:11	65	450	147	Sunny
20/10/08	11:11	12:11	73	414	131	Sunny
24/10/08	09:14	10:14	97	460	124	Fine
24/10/08	10:14	11:14	69	398	135	Fine
24/10/08	11:14	12:14	78	427	140	Fine
30/10/08	09:10	10:10	107	471	205	Fine
30/10/08	10:10	11:10	98	440	197	Fine
30/10/08	11:10	12:10	90	376	159	Fine
05/11/08	13:15	14:15	68	532	191	Cloudy
05/11/08	14:15	15:15	52	406	157	Cloudy
05/11/08	15:15	16:15	57	464	168	Cloudy
11/11/08	09:15	10:15	70	462	170	Fine
11/11/08	10:15	11:15	63	443	180	Fine
11/11/08	11:15	12:15	68	372	187	Fine
17/11/08	13:15	14:15	62	345	182	Clear
17/11/08	14:15	15:15	71	428	207	Clear
17/11/08	15:15	16:15	58	386	177	Clear
21/11/08	09:00	10:00	41	358	82	Fine
21/11/08	10:00	11:00	45	371	89	Fine
21/11/08	11:00	12:00	50	434	93	Fine
27/11/08	09:22	10:22	87	492	156	Sunny
27/11/08	10:22	11:22	90	517	170	Sunny
27/11/08	11:22	12:22	75	486	140	Sunny

Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM2

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
03/09/08	08:50	09:50	57	357	69	Drizzle
03/09/08	09:50	10:50	59	362	74	Drizzle
03/09/08	10:50	11:50	69	453	103	Drizzle
09/09/08	09:15	10:15	115	495	185	Sunny
09/09/08	10:15	11:15	106	487	165	Sunny
09/09/08	11:15	12:15	95	463	152	Sunny
16/09/08	09:20	10:20	105	400	196	Sunny
16/09/08	10:20	11:20	106	471	180	Sunny
16/09/08	11:20	12:20	110	414	165	Sunny
22/09/08	13:05	14:05	59	344	155	Cloudy
22/09/08	14:05	15:05	72	460	176	Cloudy
22/09/08	15:05	16:05	62	376	164	Cloudy
26/09/08	09:00	10:00	68	425	192	Sunny
26/09/08	10:00	11:00	75	476	208	Sunny
26/09/08	11:00	12:00	84	533	230	Sunny
02/10/08	13:10	14:10	43	419	101	Fine
02/10/08	14:10	15:10	50	450	120	Fine
02/10/08	15:10	16:10	51	454	119	Fine
08/10/08	13:40	14:40	58	361	166	Cloudy
08/10/08	14:40	15:40	64	438	177	Cloudy
08/10/08	15:40	16:40	53	405	156	Cloudy
14/10/08	09:33	10:33	69	412	160	Sunny
14/10/08	10:33	11:33	70	390	150	Sunny
14/10/08	11:33	12:33	68	285	136	Sunny
20/10/08	09:13	10:13	78	397	156	Sunny
20/10/08	10:13	11:13	69	420	161	Sunny
20/10/08	11:13	12:13	60	430	129	Sunny
24/10/08	09:16	10:16	69	418	134	Fine
24/10/08	10:16	11:16	85	496	157	Fine
24/10/08	11:16	12:16	77	433	136	Fine
30/10/08	09:14	10:14	102	462	214	Fine
30/10/08	10:14	11:14	106	475	226	Fine
30/10/08	11:14	12:14	94	415	176	Fine
05/11/08	13:30	14:30	60	481	184	Cloudy
05/11/08	14:30	15:30	54	435	172	Cloudy
05/11/08	15:30	16:30	48	397	156	Cloudy
11/11/08	09:18	10:18	62	458	185	Fine
11/11/08	10:18	11:18	65	465	205	Fine
11/11/08	11:18	12:18	68	359	195	Fine
17/11/08	13:25	14:25	53	390	177	Clear
17/11/08	14:25	15:25	75	455	239	Clear
17/11/08	15:25	16:25	67	413	214	Clear
21/11/08	08:55	09:55	40	354	78	Fine
21/11/08	09:55	10:55	39	366	84	Fine
21/11/08	10:55	11:55	48	441	93	Fine
27/11/08	09:20	10:20	88	509	157	Sunny
27/11/08	10:20	11:20	76	538	169	Sunny
27/11/08	11:20	12:20	89	472	138	Sunny

Summary of 1-hr TSP Monitoring Results

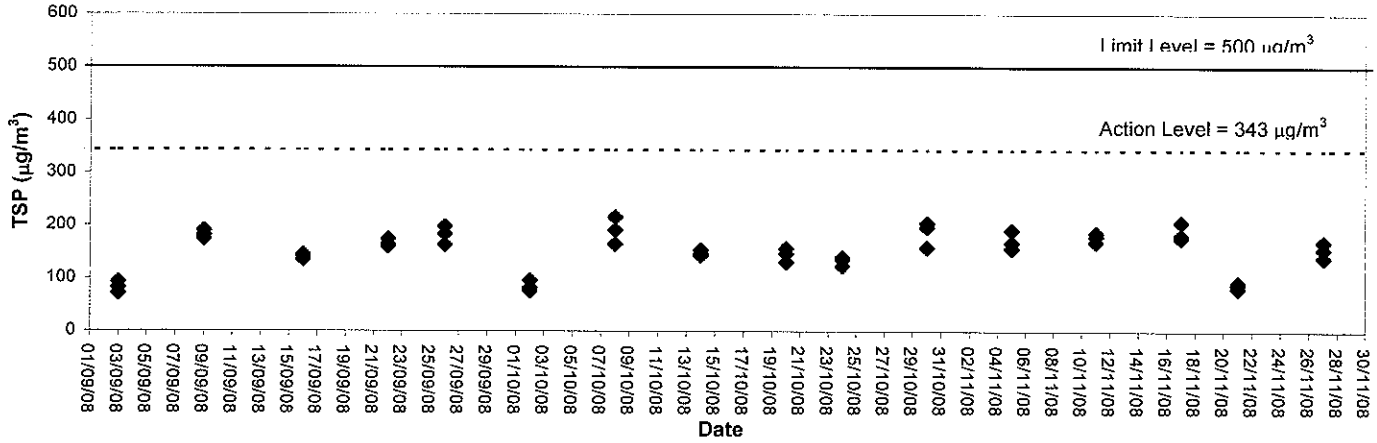
Monitoring Station : AM3

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
03/09/08	13:30	14:30	81	524	125	Sunny
03/09/08	14:30	15:30	74	508	119	Sunny
03/09/08	15:30	16:30	62	467	127	Sunny
09/09/08	13:00	14:00	87	395	144	Sunny
09/09/08	14:00	15:00	96	362	122	Sunny
09/09/08	15:00	16:00	98	360	137	Sunny
16/09/08	13:00	14:00	99	520	155	Sunny
16/09/08	14:00	15:00	105	459	145	Sunny
16/09/08	15:00	16:00	100	428	138	Sunny
22/09/08	09:10	10:10	65	359	163	Cloudy
22/09/08	10:10	11:10	88	514	207	Cloudy
22/09/08	11:10	12:10	77	487	183	Cloudy
26/09/08	13:15	14:15	80	542	212	Sunny
26/09/08	14:15	15:15	88	506	215	Sunny
26/09/08	15:15	16:15	64	487	182	Sunny
02/10/08	13:30	14:30	68	603	135	Fine
02/10/08	14:30	15:30	74	653	159	Fine
02/10/08	15:30	16:30	63	599	122	Fine
08/10/08	09:10	10:10	71	428	212	Cloudy
08/10/08	10:10	11:10	65	459	192	Cloudy
08/10/08	11:10	12:10	79	483	224	Cloudy
14/10/08	13:05	14:05	87	421	201	Sunny
14/10/08	14:05	15:05	90	406	186	Sunny
14/10/08	15:05	16:05	68	354	192	Sunny
20/10/08	13:00	14:00	82	562	170	Sunny
20/10/08	14:00	15:00	95	507	219	Sunny
20/10/08	15:00	16:00	90	492	185	Sunny
24/10/08	13:00	14:00	112	516	155	Fine
24/10/08	14:00	15:00	106	538	150	Fine
24/10/08	15:00	16:00	98	461	162	Fine
30/10/08	13:00	14:00	102	500	223	Fine
30/10/08	14:00	15:00	110	535	205	Fine
30/10/08	15:00	16:00	95	470	175	Fine
05/11/08	09:20	10:20	63	496	182	Cloudy
05/11/08	10:20	11:20	77	584	207	Cloudy
05/11/08	11:20	12:20	71	567	201	Cloudy
11/11/08	13:00	14:00	106	488	203	Fine
11/11/08	14:00	15:00	95	547	192	Fine
11/11/08	15:00	16:00	98	505	209	Fine
17/11/08	09:10	10:10	64	486	200	Clear
17/11/08	10:10	11:10	83	573	226	Clear
17/11/08	11:10	12:10	76	542	221	Clear
21/11/08	13:15	14:15	61	590	111	Fine
21/11/08	14:15	15:15	67	634	128	Fine
21/11/08	15:15	16:15	58	611	117	Fine
27/11/08	13:00	14:00	102	568	155	Sunny
27/11/08	14:00	15:00	99	524	170	Sunny
27/11/08	15:00	16:00	110	499	150	Sunny

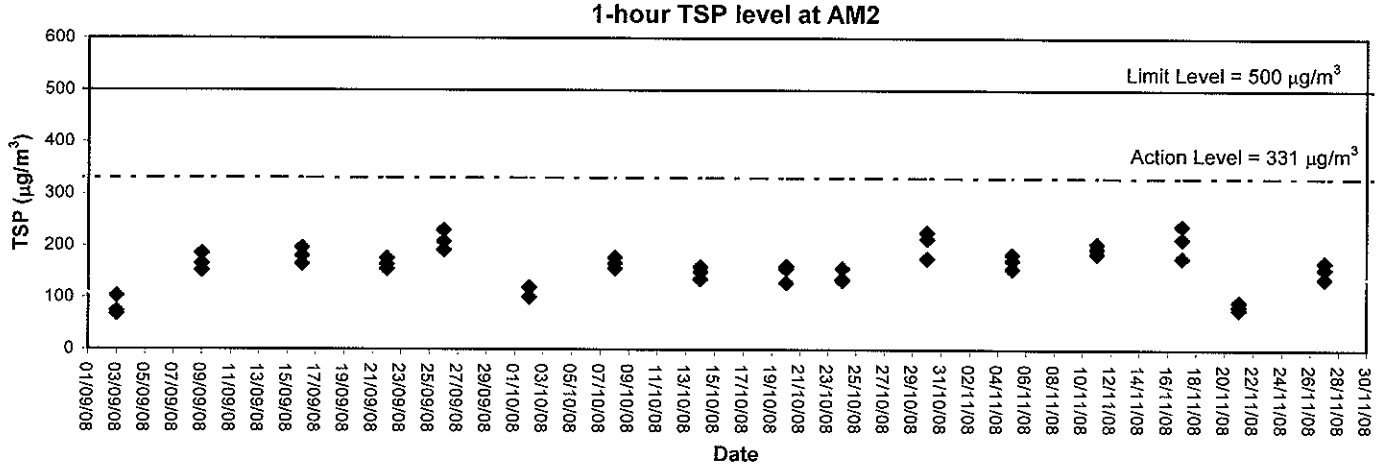
Appendix B2

Graphical Plots of Impact Air Quality Monitoring Data in this Quarter

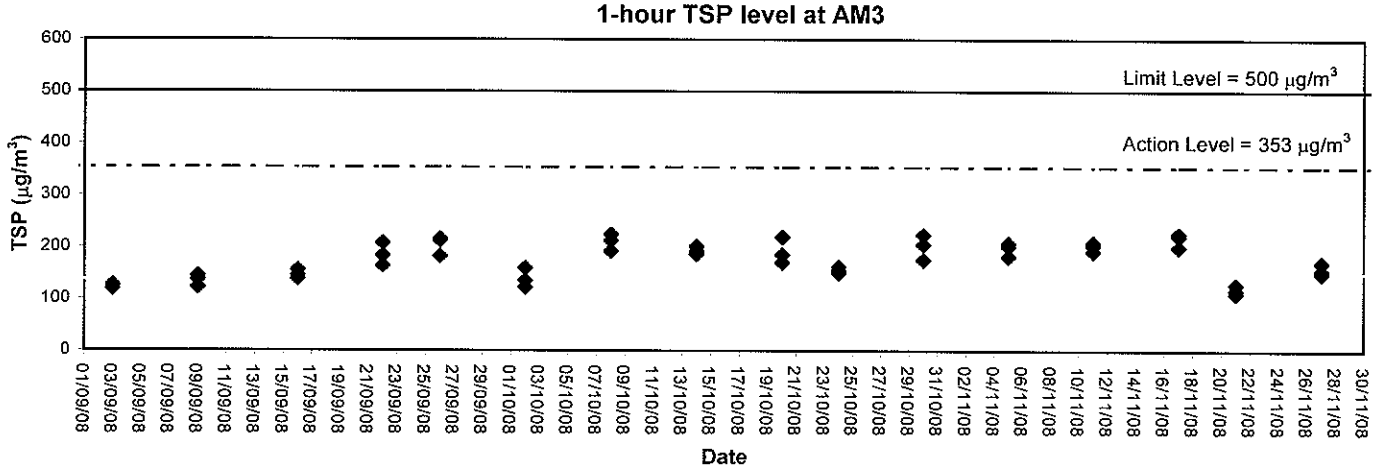
1-hour TSP level at AM1

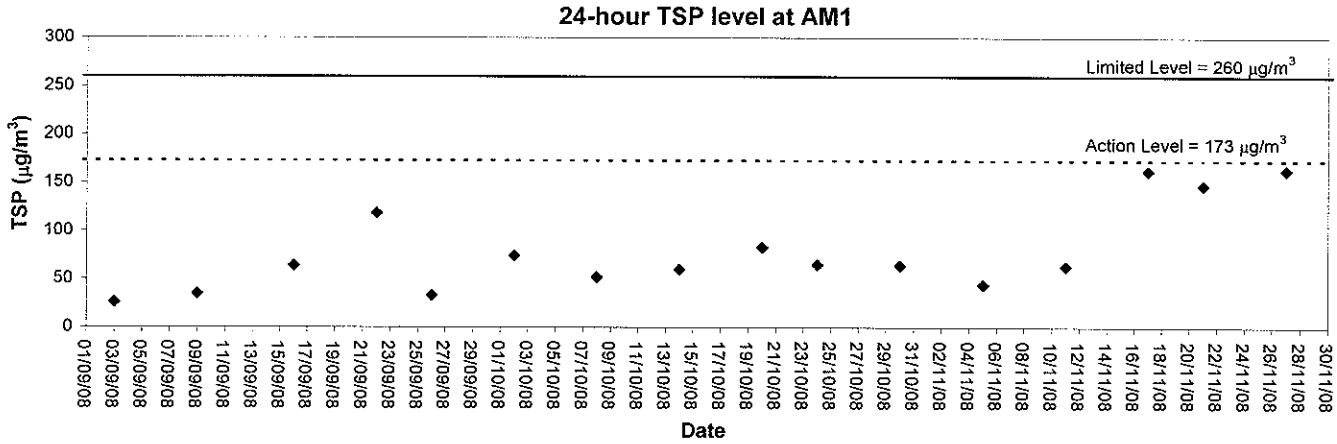


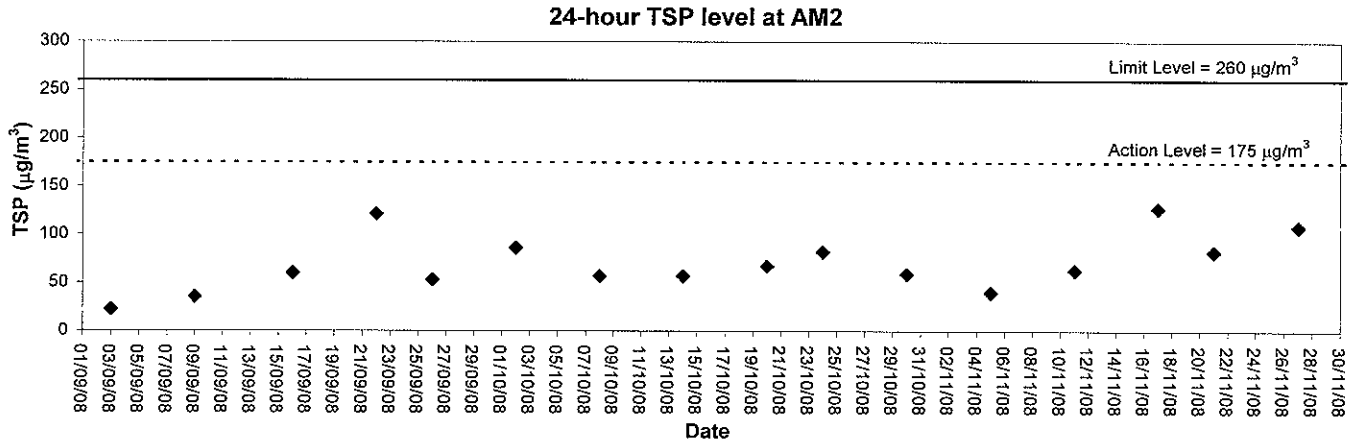
1-hour TSP level at AM2

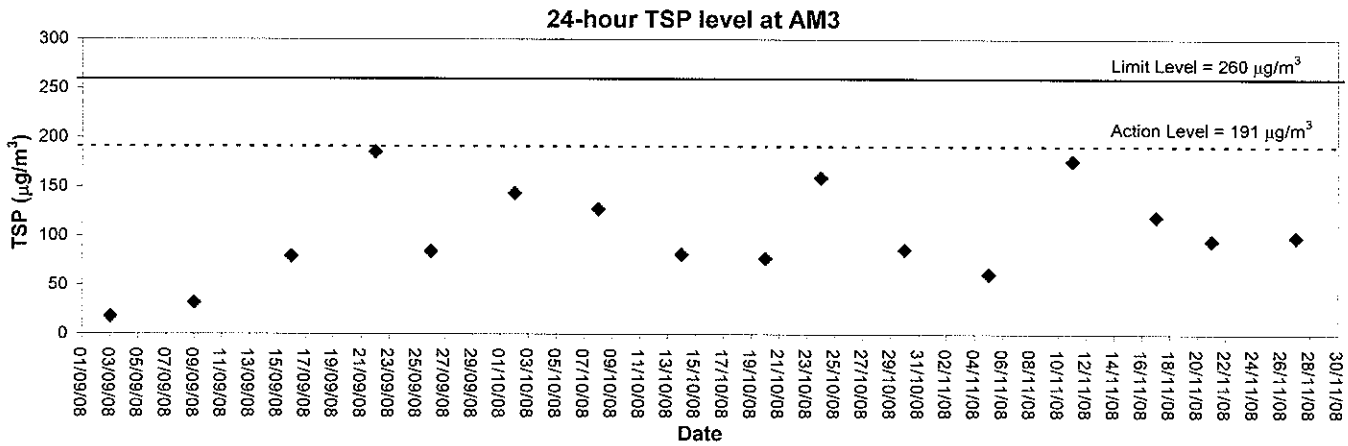


1-hour TSP level at AM3




24-hour TSP level at AM1
Limited Level = 260 μg/m3
Action Level = 173 μg/m3
TSP (μg/m3)
Date


24-hour TSP level at AM2
Limit Level = 260 μg/m3
Action Level = 175 μg/m3
TSP (μg/m3)
Date


24-hour TSP level at AM3
Limit Level = 260 μg/m3
Action Level = 191 μg/m3
TSP (μg/m3)
Date

Appendix C1

Impact Noise Monitoring Results in this Quarter

Day-time Noise Monitoring

Monitoring Station: NM1

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
03/09/08	Sunny	15:50	16:20	56.6	59.9	52.3	0.6
09/09/08	Sunny	09:30	10:00	62.1	64.4	58.5	0.2
16/09/08	Sunny	15:10	15:40	58.1	60.4	52.0	0.2
22/09/08	Cloudy	13:15	13:45	52.0	56.8	47.5	0.9
02/10/08	Fine	13:15	13:45	54.4	57.3	50.2	0.5
08/10/08	Cloudy	13:45	14:15	52.7	56.4	49.8	1.4
14/10/08	Sunny	14:10	14:40	58.1	59.7	55.4	1.5
20/10/08	Sunny	15:10	15:40	60.5	62.1	57.4	0.2
30/10/08	Fine	14:35	15:05	58.1	60.6	55.0	0.4
05/11/08	Cloudy	13:45	14:15	53.0	55.4	47.9	0.6
11/11/08	Fine	14:25	14:55	60.1	62.1	55.0	1.8
17/11/08	Clear	13:30	14:00	56.0	58.9	50.8	1.7
27/11/08	Sunny	11:32	12:02	60.8	32.1	48.9	2.0

Monitoring Station: NM2

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
03/09/08	Sunny	15:05	15:35	69.3	73.2	65.2	0.4
09/09/08	Sunny	10:10	10:40	68.3	70.5	54.1	0.5
16/09/08	Sunny	14:20	14:50	70.2	73.6	65.0	0.4
22/09/08	Cloudy	14:08	14:38	65.6	67.4	59.2	0.4
02/10/08	Fine	13:55	14:25	66.7	70.1	63.4	0.8
08/10/08	Cloudy	14:40	15:10	66.7	68.9	63.3	0.8
14/10/08	Sunny	13:20	13:50	61.8	62.8	55.7	1.7
20/10/08	Sunny	10:45	11:15	62.0	62.5	55.0	<0.1
30/10/08	Fine	11:00	11:30	62.5	64.9	55.3	0.2
05/11/08	Cloudy	14:40	15:10	65.9	70.2	63.5	1.2
11/11/08	Fine	11:05	11:35	64.5	66.1	53.7	1.5
17/11/08	Clear	14:15	14:45	68.2	71.3	63.9	0.6
27/11/08	Sunny	09:35	10:05	62.9	63.2	52.4	2.0

Monitoring Station: RNM3

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
03/09/08	Sunny	14:20	14:50	63.4	66.7	59.2	0.9
09/09/08	Sunny	11:10	11:40	74.8	77.0	62.1	0.5
16/09/08	Sunny	11:25	11:55	73.6	78.1	57.5	0.5
22/09/08	Cloudy	10:02	10:32	59.7	63.8	52.4	1.2
02/10/08	Fine	14:38	15:08	57.4	61.4	54.8	0.7
08/10/08	Cloudy	10:15	10:45	63.8	69.2	60.7	0.6
14/10/08	Sunny	11:40	12:10	72.6	77.8	58.2	2.0
20/10/08	Sunny	11:19	11:49	74.7	77.0	66.7	0.8
30/10/08	Fine	13:48	14:18	64.9	66.3	58.7	0.4
05/11/08	Cloudy	15:30	16:00	56.2	5935	52.1	0.8
11/11/08	Fine	10:20	10:50	61.1	62.7	54.4	2.0
17/11/08	Clear	15:05	15:35	62.2	65.3	59.4	0.9
27/11/08	Sunny	10:15	10:45	74.9	75.9	58.7	2.6

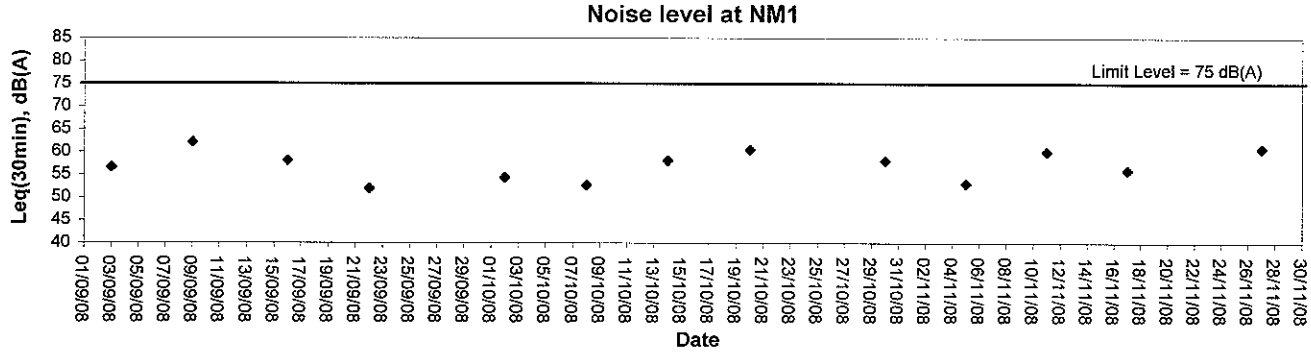
Monitoring Station: NM4

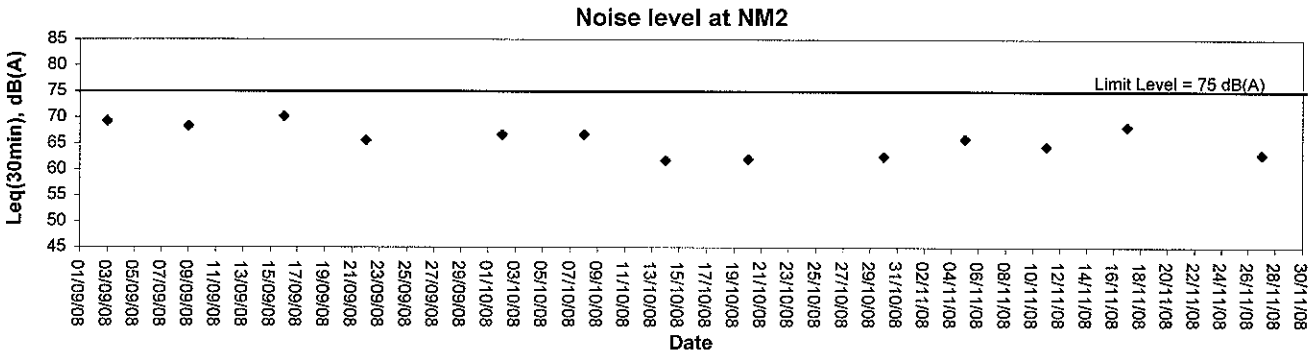
Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
03/09/08	Sunny	13:40	14:10	55.7	58.9	42.2	0.3
09/09/08	Sunny	13:15	13:45	73.3	77.5	52.7	0.2
16/09/08	Sunny	13:35	14:05	62.5	65.4	49.8	0.6
22/09/08	Cloudy	09:20	09:50	64.2	69.2	58.3	1.7
02/10/08	Fine	15:20	15:50	58.8	61.4	55.6	0.5
08/10/08	Cloudy	09:30	10:00	59.7	63.3	54.8	1.7
14/10/08	Sunny	11:06	11:36	65.0	68.6	58.6	2.6
20/10/08	Sunny	13:50	14:20	49.5	51.4	43.5	0.2
30/10/08	Fine	13:08	13:38	57.3	60.8	52.9	0.4
05/11/08	Cloudy	09:32	10:02	64.3	65.8	60.4	1.5
11/11/08	Fine	09:45	10:15	58.6	60.6	51.9	1.5
17/11/08	Clear	15:45	16:15	64.0	66.8	63.7	1.8
27/11/08	Sunny	10:55	11:25	53.2	53.6	49.0	4.0

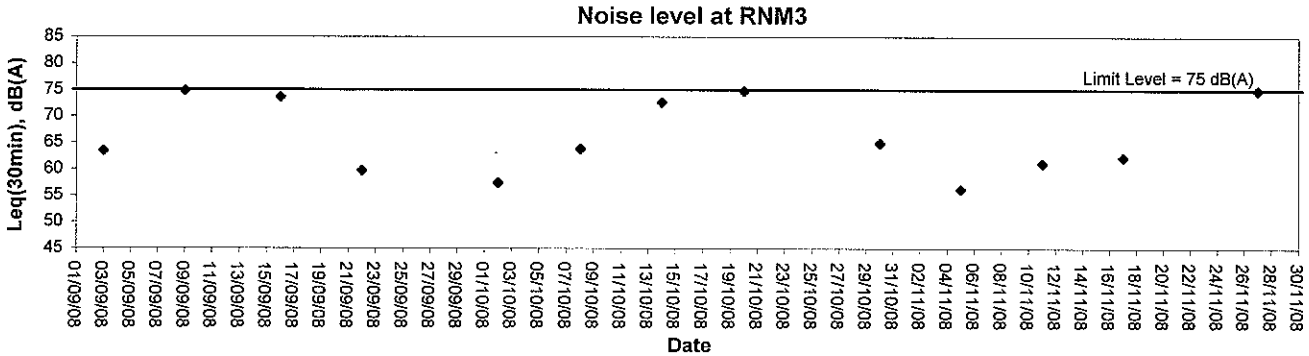
Appendix C2

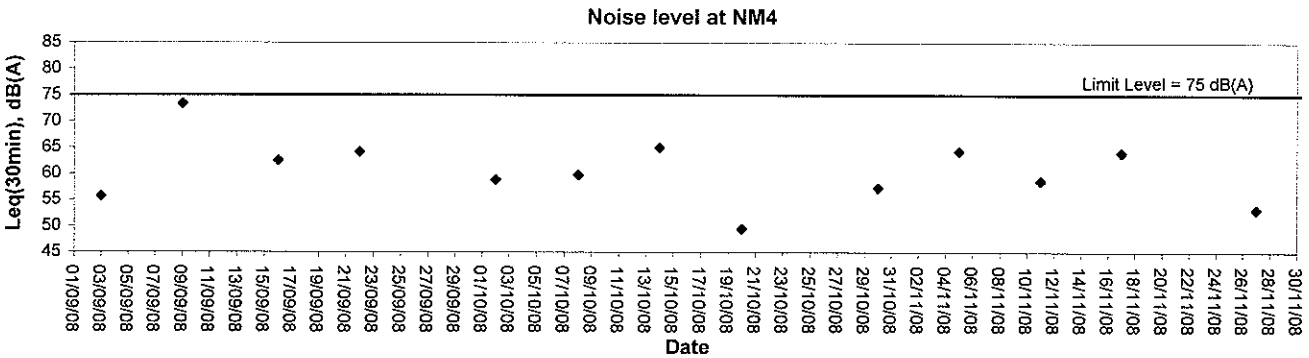
Graphical Plots of Impact Noise Monitoring Data in this Quarter

Noise Monitoring (Day-time)









Appendix D

Environmental Quality Performance (Action / Limit Levels)

Action and Limit levels for 24-hr TSP and 1-hr TSP

Monitoring Station	*24-hr TSP ($\mu g/m^3$)*		*1-hr TSP ($\mu g/m^3$)*	
	Action Level	*Limit Level*	*Action Level*	*Limit Level*
AM1	*173*	*260*	*343*	*500*
AM2	*175*	*260*	*331*	*500*
AM3	*191*	*260*	*353*	*500*

Action and Limit Levels for Noise Monitoring

Time Period	*Action*	*Limit*
0700 –1900 hrs normal weekdays	*When one documented complaint is received*	*75 dB(A)*

Appendix E

Event-Action Plans

Event / Action Plan for Air Quality

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action Level				
Action Level being exceeded for one sample	1. Identify source, investigate the causes of Exceedance and propose remedial measures; 2. Inform IC(E) and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded for two or more consecutive samples	1. Same as the above; 2. Advise the ER on the effectiveness of te proposed remedial measures; 3. Discuss with IC(E) and Contractor on remedial actions required; 4. If exceedance continues, arrange meeting with IC(E) and ER; 5. If exceedance stops, cease additional monitoring.	1. Sane as the above; 2. Discuss with ET and Contractor on possible remedial measures; 3. Advise the ET on the effectiveness of the proposed remedial measures; 4.. Supervise implementation of remedial measures.	1. Same as the above; 2. Confirm receipt of notification of failure in writing; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
Limit Level				
Limit Level being exceeded for one sample	1. Identify source; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results.	1. Checking monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on the possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial actions properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded for two or more consecutive samples	1. Same as the above; 2. Carry our analysis of Contractor's working procedures to determine possible mitigation to be implemented; 3. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken; 4. If exceedance stops, cease additional monitoring.	1. Discuss with ER, ET and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assume their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Same as the above; 2. In consolidation with the IC(E), agree with the Contractor on the remedial measures to be implemented; 3. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Same as the above; 2. Resubmit proposals if problem still not under control; 3. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

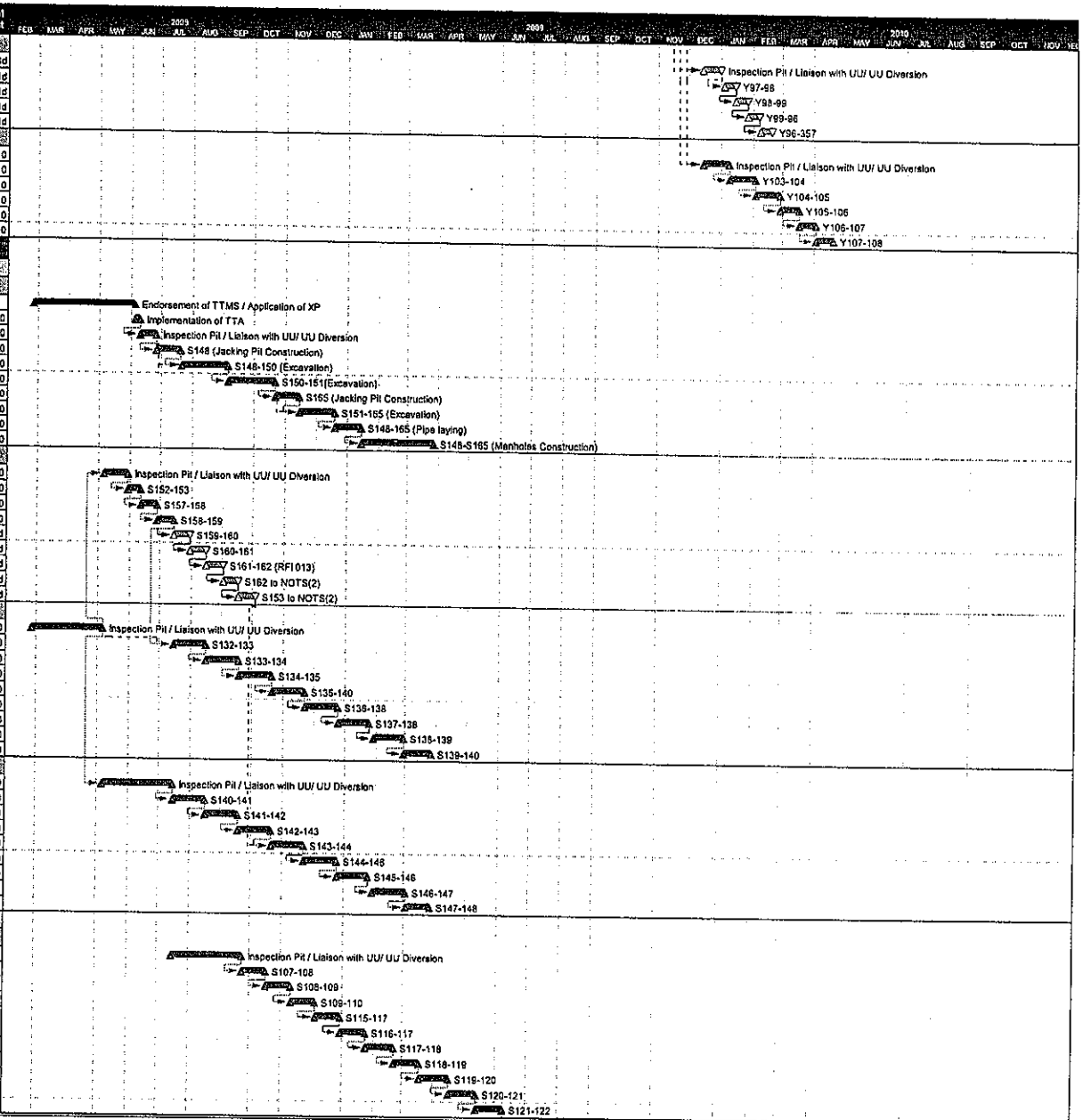
Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action level	1. Notify IC(E) and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IC(E), ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures ; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review and investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure proper implementation of remedial measures.	1. Submit noise mitigation proposal to IC(E); 2. Implement noise mitigation proposals.
Limit level	1. Identify source; 2. Inform IC(E), ER, EPD and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IC(E), ER and EPD the causes and actions taken for the exceedances; 7. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions to ensure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Same as above; 2. If exceedances continue, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E); 3. Implement the agreed proposals; 4. Resubmit proposals if problem still out of control; 5. Stop the relevant portion of works as determined by ER, until the exceedance is abated.

Appendix F

Construction Programme

Act ID	Activity Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
Y97 - Y99 - Y96 - Y357							
PW3119	Inspection Pit / Liaison with UU/ UU Diversion	14	14 DEC 09	31 DEC 09	16 FEB 10	03 MAR 10	53d
PW3120	Y97-98	10	04 JAN 10 *	14 JAN 10	04 MAR 10	15 MAR 10	51d
PW3130	Y98-99	10	15 JAN 10	26 JAN 10	16 MAR 10	26 MAR 10	51d
PW3140	Y99-96	10	27 JAN 10	06 FEB 10	27 MAR 10	07 APR 10	51d
PW3150	Y96-357	10	08 FEB 10 *	18 FEB 10	08 APR 10	19 APR 10	51d
Y103 - Y108							
PW1499	Inspection Pit / Liaison with UU/ UU Diversion	21	14 DEC 09	08 JAN 10	14 DEC 09	08 JAN 10	0
PW1500	Y103-104	21	09 JAN 10 *	02 FEB 10	09 JAN 10	02 FEB 10	0
PW1510	Y104-105	21	03 FEB 10	26 FEB 10	03 FEB 10	26 FEB 10	0
PW1520	Y105-106	16	27 FEB 10	17 MAR 10	27 FEB 10	17 MAR 10	0
PW1530	Y106-107	14	18 MAR 10	02 APR 10	18 MAR 10	02 APR 10	0
PW1540	Y107-108	14	03 APR 10	19 APR 10	03 APR 10	19 APR 10	0
SOK KWU WAN							
WO 006 (S148-S165 Trenchless and SKW2nd St.)							
S148-S165 Trenchless							
MT4707	Endorsement of TTMS / Application of XP	0	26 FEB 08	04 JUN 08	26 FEB 08	04 JUN 08	
MT4708	Implementation of TTA	4	05 JUN 08 *	09 JUN 08	05 JUN 08	09 JUN 08	0
MT4709	Inspection Pit / Liaison with UU/ UU Diversion	14	10 JUN 08 *	25 JUN 08	10 JUN 08	25 JUN 08	0
MT4710	S148 (Jacking Pit Construction)	21	26 JUN 08	19 JUL 08	26 JUN 08	19 JUL 08	0
MT4711	S148-150 (Excavation)	40	21 JUL 08	04 SEP 08	21 JUL 08	04 SEP 08	0
MT4721	S150-151(Excavation)	40	05 SEP 08	21 OCT 08	05 SEP 08	21 OCT 08	0
MT4730	S165 (Jacking Pit Construction)	21	22 OCT 08	14 NOV 08	22 OCT 08	14 NOV 08	0
MT4731	S151-165 (Excavation)	30	15 NOV 08	19 DEC 08	15 NOV 08	19 DEC 08	0
MT4820	S148-165 (Pipe laying)	21	20 DEC 08	14 JAN 09	20 DEC 08	14 JAN 09	0
MT4830	S148-S165 (Manholes Construction)	58	15 JAN 09	26 MAR 09	15 JAN 09	26 MAR 09	0
S157-S162 - End, S152-S153-End							
MT4739	Inspection Pit / Liaison with UU/ UU Diversion	21	06 MAY 08	29 MAY 08	06 MAY 08	29 MAY 08	0
MT4740	S152-153	11	30 MAY 08	11 JUN 08	30 MAY 08	11 JUN 08	0
MT4750	S157-158	14	12 JUN 08	27 JUN 08	12 JUN 08	27 JUN 08	0
MT4760	S158-159	14	28 JUN 08	14 JUL 08	28 JUN 08	14 JUL 08	0
MT4770	S159-160	14	15 JUL 08	30 JUL 08	31 JUL 08	15 AUG 08	14d
MT4780	S160-161	14	31 JUL 08	15 AUG 08	16 AUG 08	01 SEP 08	14d
MT4790	S161-162 (RFI013)	14	16 AUG 08	01 SEP 08	02 SEP 08	17 SEP 08	14d
MT4800	S162 to NOTS(2)	13	02 SEP 08	16 SEP 08	18 SEP 08	02 OCT 08	14d
MT4810	S153 to NOTS(2)	15	17 SEP 08	03 OCT 08	03 OCT 08	20 OCT 08	14d
S132-S140							
SS4819	Inspection Pit / Liaison with UU/ UU Diversion	60	26 FEB 08	05 MAY 08	26 FEB 08	05 MAY 08	0
SS4820	S132-133	28	15 JUL 08	15 AUG 08	15 JUL 08	15 AUG 08	0
SS4830	S133-134	28	16 AUG 08	17 SEP 08	16 AUG 08	17 SEP 08	0
SS4840	S134-135	28	18 SEP 08	20 OCT 08	18 SEP 08	20 OCT 08	0
SS4850	S135-140	28	21 OCT 08	21 NOV 08	21 OCT 08	21 NOV 08	0
SS4860	S136-138	28	22 NOV 08	24 DEC 08	22 NOV 08	24 DEC 08	0
SS4870	S137-138	26	25 DEC 08	24 JAN 09	25 DEC 08	24 JAN 09	0
SS4880	S138-139	26	29 JAN 09	27 FEB 09	29 JAN 09	27 FEB 09	0
SS4890	S139-140	23	28 FEB 09	26 MAR 09	28 FEB 09	26 MAR 09	0
S140-S148							
SS4899	Inspection Pit / Liaison with UU/ UU Diversion	60	06 MAY 08	14 JUL 08	06 MAY 08	14 JUL 08	0
SS4900	S140-141	28	15 JUL 08	15 AUG 08	15 JUL 08	15 AUG 08	0
SS4910	S141-142	28	16 AUG 08	17 SEP 08	16 AUG 08	17 SEP 08	0
SS4920	S142-143	28	18 SEP 08	20 OCT 08	18 SEP 08	20 OCT 08	0
SS4930	S143-144	28	21 OCT 08	21 NOV 08	21 OCT 08	21 NOV 08	0
SS4940	S144-146	28	22 NOV 08	24 DEC 08	22 NOV 08	24 DEC 08	0
SS4950	S145-146	26	25 DEC 08	24 JAN 09	25 DEC 08	24 JAN 09	0
SS4960	S145-147	28	29 JAN 09	02 MAR 09	29 JAN 09	02 MAR 09	0
SS4970	S147-148	21	03 MAR 09	26 MAR 09	03 MAR 09	26 MAR 09	0
WO 010 (SKW 3rd Branches & CM S37-S60-S57)							
S107-S110 S115-S123 S112-S113							
SS5119	Inspection Pit / Liaison with UU/ UU Diversion	60	15 JUL 08	22 SEP 08	15 JUL 08	22 SEP 08	0
SS5120	S107-108	21	23 SEP 08	16 OCT 08	23 SEP 08	16 OCT 08	0
SS5130	S108-109	21	17 OCT 08	10 NOV 08	17 OCT 08	10 NOV 08	0
SS5140	S109-110	21	11 NOV 08	04 DEC 08	11 NOV 08	04 DEC 08	0
SS5150	S115-117	21	05 DEC 08	29 DEC 08	05 DEC 08	29 DEC 08	0
SS5160	S116-117	21	30 DEC 08	23 JAN 09	30 DEC 08	23 JAN 09	0
SS5170	S117-118	21	24 JAN 09	20 FEB 09	24 JAN 09	20 FEB 09	0
SS5180	S118-119	21	21 FEB 09	17 MAR 09	21 FEB 09	17 MAR 09	0
SS5190	S119-120	21	18 MAR 09	15 APR 09	18 MAR 09	15 APR 09	0
SS5200	S120-121	21	16 APR 09	12 MAY 09	16 APR 09	12 MAY 09	0
SS5210	S121-122	21	13 MAY 09	08 JUN 09	13 MAY 09	08 JUN 09	0



Start Date 31 JAN 08
Finish Date 19 APR 10

Page : 7A

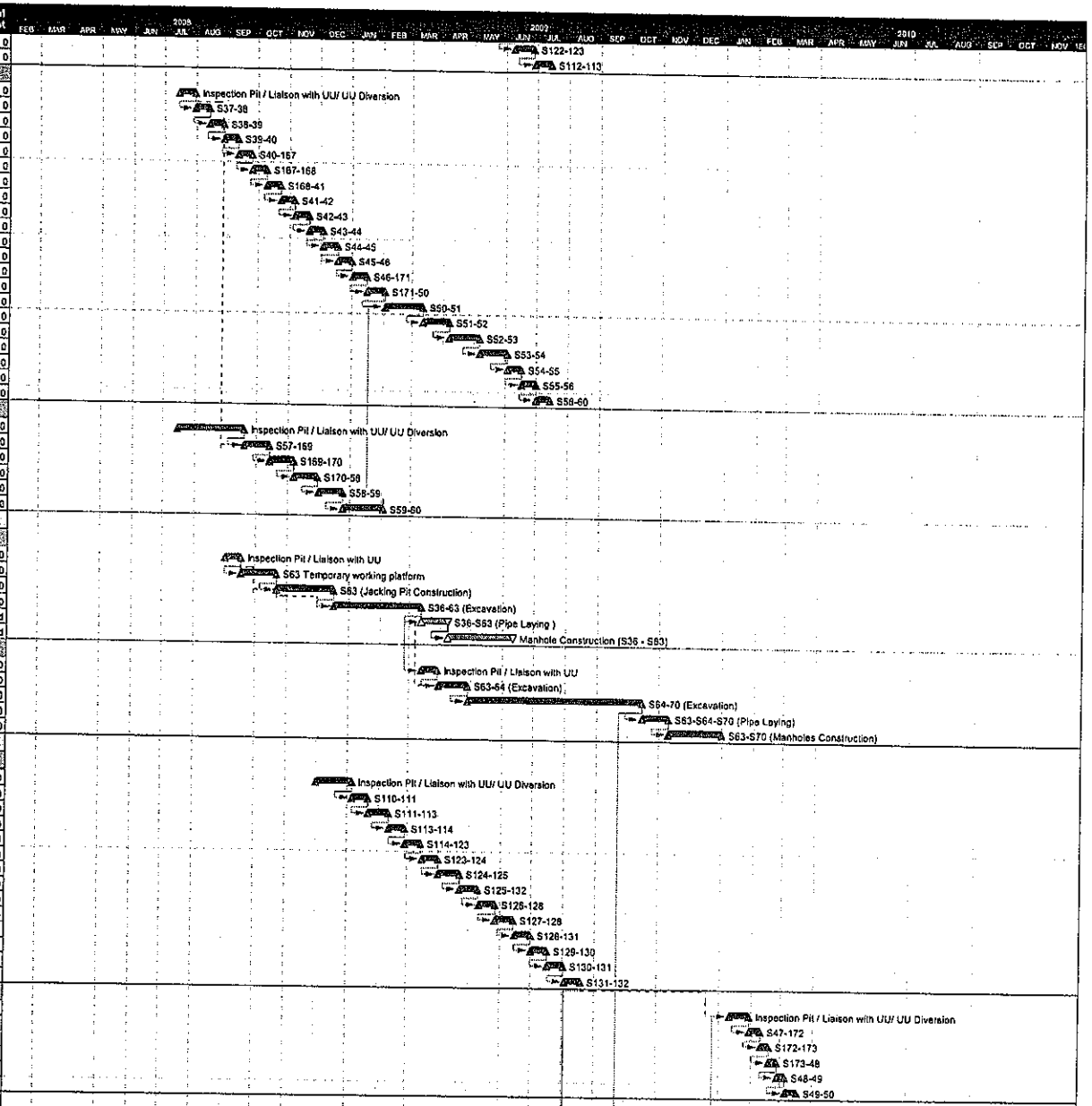
△ Early start point	▲ Progress point		
▽ Early finish point	▲ Critical point		
Early bar	Summary point		
Progress bar	Start milestone point		
Critical bar	Finish milestone point		
Summary bar			

DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 4

Kaden

Date	Revision	Checked	Approved
02 MAY 08	Revision 1	SIL	KYS
16 JUN 08	Revision 2	SIL	KYS
03 SEP 08	Revision 3	SIL	KC
31 OCT 08	Revision 4	SIL	KYS

Act ID	Activity Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
SS5220	S122-123	17	09 JUN 09	27 JUN 09	09 JUN 09	27 JUN 09	0
SS5230	S112-113	14	29 JUN 09	14 JUL 09	29 JUN 09	14 JUL 09	0
S37-S60							
CM5859	Inspection Pit / Liaison with UU/ UU Diversion	14	15 JUL 08	30 JUL 08	15 JUL 08	30 JUL 08	0
CM5860	S37-38	12	31 JUL 08	13 AUG 08	31 JUL 08	13 AUG 08	0
CM5870	S38-39	12	14 AUG 08	27 AUG 08	14 AUG 08	27 AUG 08	0
CM5880	S39-40	12	28 AUG 08	10 SEP 08	28 AUG 08	10 SEP 08	0
CM5890	S40-167	12	11 SEP 08	24 SEP 08	11 SEP 08	24 SEP 08	0
CM5900	S167-168	12	25 SEP 08	08 OCT 08	25 SEP 08	08 OCT 08	0
CM5910	S168-41	12	09 OCT 08	22 OCT 08	09 OCT 08	22 OCT 08	0
CM5920	S41-42	12	23 OCT 08	05 NOV 08	23 OCT 08	05 NOV 08	0
CM5930	S42-43	12	06 NOV 08	19 NOV 08	06 NOV 08	19 NOV 08	0
CM5940	S43-44	12	20 NOV 08	03 DEC 08	20 NOV 08	03 DEC 08	0
CM5950	S44-45	12	04 DEC 08	17 DEC 08	04 DEC 08	17 DEC 08	0
CM5960	S45-46	12	18 DEC 08	31 DEC 08	18 DEC 08	31 DEC 08	0
CM5970	S46-171	12	02 JAN 09	15 JAN 09	02 JAN 09	15 JAN 09	0
CM5980	S171-50	12	16 JAN 09	02 FEB 09	16 JAN 09	02 FEB 09	0
CM5981	S50-51	32	03 FEB 09	11 MAR 09	03 FEB 09	11 MAR 09	0
CM5982	S51-52	21	12 MAR 09	06 APR 09	12 MAR 09	06 APR 09	0
CM5983	S52-53	21	07 APR 09	06 MAY 09	07 APR 09	06 MAY 09	0
CM5984	S53-54	21	07 MAY 09	02 JUN 09	07 MAY 09	02 JUN 09	0
CM5990	S54-55	12	03 JUN 09	16 JUN 09	03 JUN 09	16 JUN 09	0
CM6000	S55-56	12	17 JUN 09	30 JUN 09	17 JUN 09	30 JUN 09	0
CM6010	S56-60	12	01 JUL 09	14 JUL 09	01 JUL 09	14 JUL 09	0
S57-S60 & Clearance of Squattered Huts							
CM6069	Inspection Pit / Liaison with UU/ UU Diversion	57	15 JUL 08	16 SEP 08	15 JUL 08	16 SEP 08	0
CM6070	S57-169	21	19 SEP 08	13 OCT 08	19 SEP 08	13 OCT 08	0
CM6080	S169-170	21	14 OCT 08	08 NOV 08	14 OCT 08	08 NOV 08	0
CM6090	S170-58	20	07 NOV 08	28 NOV 08	07 NOV 08	28 NOV 08	0
CM6100	S58-59	21	01 DEC 08	24 DEC 08	01 DEC 08	24 DEC 08	0
CM6110	S59-60	30	25 DEC 08	02 FEB 09	25 DEC 08	02 FEB 09	0
WO 015 (Trenchless S36-S70)							
S36-S63 - S36A-S63A (Trenchless)							
CM6209	Inspection Pit / Liaison with UU	14	01 SEP 08	16 SEP 08	01 SEP 08	16 SEP 08	0
CM6210	S63 Temporary working platform	30	17 SEP 08	21 OCT 08	17 SEP 08	21 OCT 08	0
CM6212	S63 (Jacking Pit Construction)	48	22 OCT 08	16 DEC 08	22 OCT 08	16 DEC 08	0
CM6220	S36-63 (Excavation)	70	17 DEC 08	12 MAR 09	17 DEC 08	12 MAR 09	0
CM6270	S36-S63 (Pipe Laying)	21	13 MAR 09	07 APR 09	09 OCT 09	03 NOV 09	170d
CM6280	Manhole Construction (S36 - S63)	48	08 APR 09	10 JUN 09	04 NOV 09	31 DEC 09	170d
S64-S70 (Trenchless)							
CM6229	Inspection Pit / Liaison with UU	14	13 MAR 09	26 MAR 09	13 MAR 09	26 MAR 09	0
CM6230	S63-64 (Excavation)	21	30 MAR 09	27 APR 09	30 MAR 09	27 APR 09	0
CM6240	S64-70 (Excavation)	140	28 APR 09	14 OCT 09	28 APR 09	14 OCT 09	0
CM6290	S63-S64-S70 (Pipe Laying)	21	15 OCT 09	09 NOV 09	15 OCT 09	09 NOV 09	0
CM6300	S63-S70 (Manholes Construction)	43	10 NOV 09	31 DEC 09	10 NOV 09	31 DEC 09	0
WO 017 (SKW2nd Branches to 3rd St & CM)							
S110-S132 S127-S132							
SS4979	Inspection Pit / Liaison with UU/ UU Diversion	30	01 DEC 08	05 JAN 09	01 DEC 08	05 JAN 09	0
SS4980	S110-111	14	06 JAN 09 *	21 JAN 09	06 JAN 09	21 JAN 09	0
SS4990	S111-113	14	22 JAN 09	10 FEB 09	22 JAN 09	10 FEB 09	0
SS5010	S113-114	14	11 FEB 09	26 FEB 09	11 FEB 09	26 FEB 09	0
SS5020	S114-123	14	27 FEB 09	14 MAR 09	27 FEB 09	14 MAR 09	0
SS5030	S123-124	14	16 MAR 09	31 MAR 09	16 MAR 09	31 MAR 09	0
SS5040	S124-125	14	01 APR 09	21 APR 09	01 APR 09	21 APR 09	0
SS5050	S125-132	14	22 APR 09	09 MAY 09	22 APR 09	09 MAY 09	0
SS5060	S126-128	14	11 MAY 09	26 MAY 09	11 MAY 09	26 MAY 09	0
SS5070	S127-128	14	27 MAY 09	13 JUN 09	27 MAY 09	13 JUN 09	0
SS5080	S128-131	14	15 JUN 09	30 JUN 09	15 JUN 09	30 JUN 09	0
SS5090	S129-130	14	01 JUL 09	16 JUL 09	01 JUL 09	16 JUL 09	0
SS5100	S130-131	14	17 JUL 09	01 AUG 09	17 JUL 09	01 AUG 09	0
SS5110	S131-132	14	03 AUG 09	18 AUG 09	03 AUG 09	18 AUG 09	0
S47-S50							
AW6269	Inspection Pit / Liaison with UU/ UU Diversion	17	11 JAN 10	29 JAN 10	11 JAN 10	29 JAN 10	0
AW6270	S47-172	9	30 JAN 10	09 FEB 10	30 JAN 10	09 FEB 10	0
AW6280	S172-173	7	10 FEB 10	17 FEB 10	10 FEB 10	17 FEB 10	0
AW6290	S173-48	7	18 FEB 10	25 FEB 10	18 FEB 10	25 FEB 10	0
AW6300	S48-49	7	26 FEB 10	05 MAR 10	26 FEB 10	05 MAR 10	0
AW6310	S49-50	10	06 MAR 10	17 MAR 10	06 MAR 10	17 MAR 10	0
S16-S36							



Start Date 31 JAN 08
Finish Date 19 APR 10

Page : 8A

- Early start point
- Early finish point
- Early bar
- Progress bar
- Critical bar
- Summary bar
- Progress point
- Critical point
- Summary point
- Start milestone point
- Finish milestone point

DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 4

Kaden

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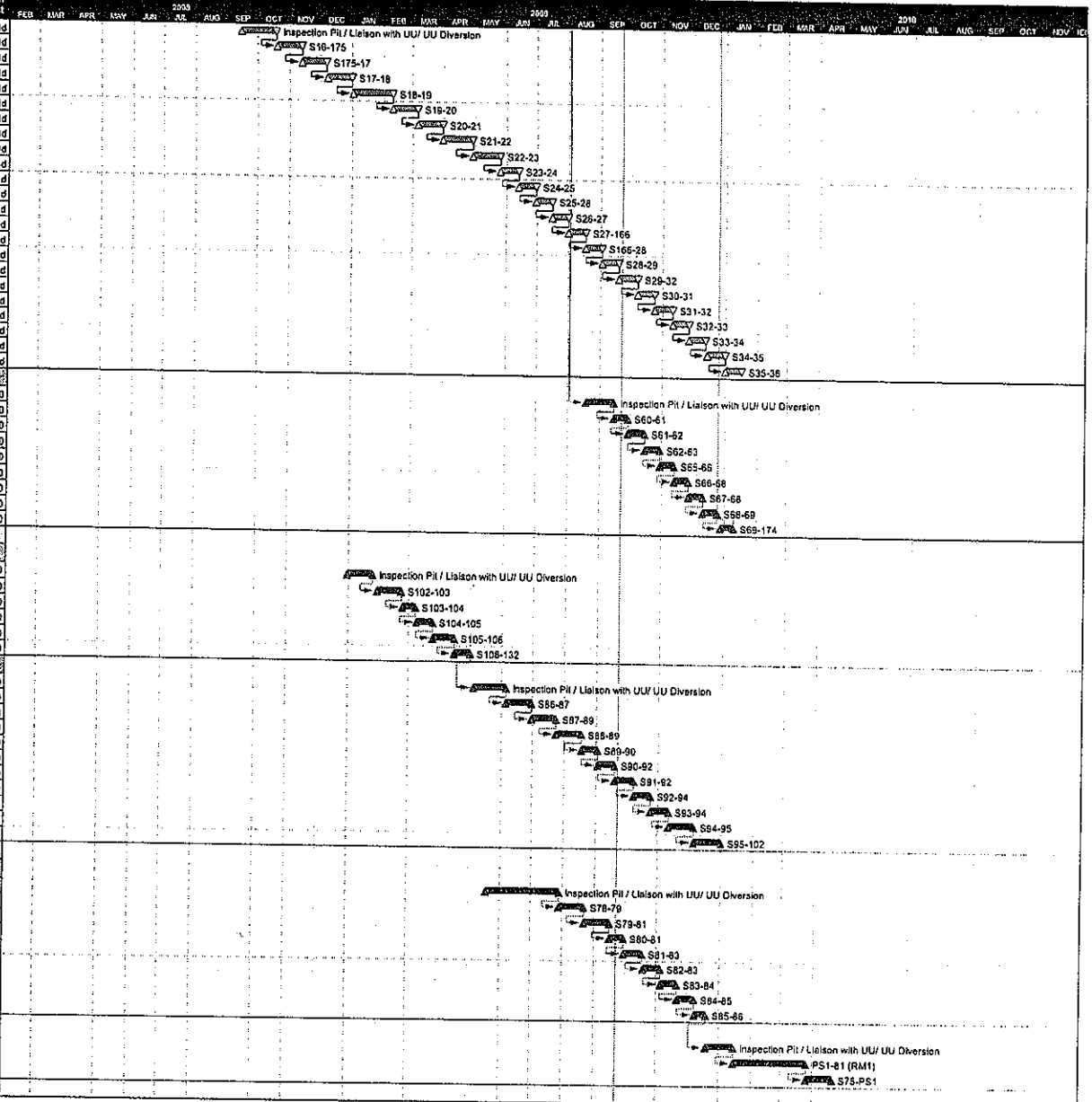
02 MAY 08	Revision 1	StL	KYS
16 JUN 08	Revision 2	StL	KYS
03 SEP 08	Revision 3	StL	KC
31 OCT 08	Revision 4	StL	KYS

Act ID	Activity Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
CM5639	Inspection Pit / Liaison with UU/ UU Diversion	30	15 SEP 08 *	18 OCT 08	13 NOV 08	17 DEC 08	51d
CM5640	S16-175	21	20 OCT 08	12 NOV 08	18 DEC 08	12 JAN 09	51d
CM5650	S175-17	21	13 NOV 08	06 DEC 08	13 JAN 09	09 FEB 09	51d
CM5660	S17-18	21	08 DEC 08	31 DEC 08	10 FEB 09	05 MAR 09	51d
CM5670	S18-19	30	02 JAN 09	09 FEB 09	06 MAR 09	14 APR 09	51d
CM5680	S19-20	21	10 FEB 09	05 MAR 09	15 APR 09	11 MAY 09	51d
CM5690	S20-21	21	06 MAR 09	30 MAR 09	12 MAY 09	08 JUN 09	51d
CM5700	S21-22	21	31 MAR 09	28 APR 09	08 JUN 09	01 JUL 09	51d
CM5710	S22-23	21	29 APR 09	25 MAY 09	02 JUL 09	25 JUL 09	51d
CM5720	S23-24	14	26 MAY 09	12 JUN 09	27 JUL 09	11 AUG 09	51d
CM5730	S24-25	14	13 JUN 09	29 JUN 09	12 AUG 09	27 AUG 09	51d
CM5740	S25-26	14	30 JUN 09	15 JUL 09	28 AUG 09	12 SEP 09	51d
CM5750	S26-27	14	16 JUL 09	31 JUL 09	14 SEP 09	29 SEP 09	51d
CM5760	S27-166	14	01 AUG 09	17 AUG 09	30 SEP 09	17 OCT 09	51d
CM5770	S166-28	14	18 AUG 09	02 SEP 09	18 OCT 09	04 NOV 09	51d
CM5780	S28-29	14	03 SEP 09	18 SEP 09	05 NOV 09	20 NOV 09	51d
CM5790	S29-32	14	19 SEP 09	07 OCT 09	21 NOV 09	07 DEC 09	51d
CM5800	S30-31	14	08 OCT 09	23 OCT 09	08 DEC 09	23 DEC 09	51d
CM5810	S31-32	14	24 OCT 09	10 NOV 09	24 DEC 09	11 JAN 10	51d
CM5820	S32-33	14	11 NOV 09	26 NOV 09	12 JAN 10	27 JAN 10	51d
CM5830	S33-34	14	27 NOV 09	12 DEC 09	28 JAN 10	12 FEB 10	51d
CM5840	S34-35	14	14 DEC 09	31 DEC 09	13 FEB 10	01 MAR 10	51d
CM5850	S35-36	14	01 JAN 10	16 JAN 10	02 MAR 10	17 MAR 10	51d
S60-S70 Incl remove AC at S67-S68							
CM6119	Inspection Pit / Liaison with UU/ UU Diversion	23	19 AUG 09	14 SEP 09	19 AUG 09	14 SEP 09	0
CM6120	S60-61	12	15 SEP 09 *	28 SEP 09	15 SEP 09	28 SEP 09	0
CM6130	S61-62	12	29 SEP 09	14 OCT 09	29 SEP 09	14 OCT 09	0
CM6140	S62-63	12	15 OCT 09	29 OCT 09	15 OCT 09	29 OCT 09	0
CM6150	S65-66	12	30 OCT 09	12 NOV 09	30 OCT 09	12 NOV 09	0
CM6160	S66-68	12	13 NOV 09	26 NOV 09	13 NOV 09	26 NOV 09	0
CM6170	S67-68	12	27 NOV 09	10 DEC 09	27 NOV 09	10 DEC 09	0
CM6180	S68-69	12	11 DEC 09	24 DEC 09	11 DEC 09	24 DEC 09	0
CM6190	S69-174	12	28 DEC 09	09 JAN 10	28 DEC 09	09 JAN 10	0
WO 020 (SKW 1st St. S86-S106 & its Branches)							
S102-S106-S132 Incl remove AC							
SS5139	Inspection Pit / Liaison with UU/ UU Diversion	21	31 DEC 08	24 JAN 09	31 DEC 08	24 JAN 09	0
SS5240	S102-103	21	29 JAN 09	21 FEB 09	29 JAN 09	21 FEB 09	0
SS5250	S103-104	12	23 FEB 09	07 MAR 09	23 FEB 09	07 MAR 09	0
SS5260	S104-105	14	09 MAR 09	24 MAR 09	09 MAR 09	24 MAR 09	0
SS5270	S105-106	14	25 MAR 09	14 APR 09	25 MAR 09	14 APR 09	0
SS5280	S106-132	14	15 APR 09	30 APR 09	15 APR 09	30 APR 09 *	0
S86-S102, S96-S102 Incl remove AC							
SS5289	Inspection Pit / Liaison with UU/ UU Diversion	26	04 MAY 09	04 JUN 09	04 MAY 09	04 JUN 09	0
SS5290	S86-87	21	05 JUN 09	29 JUN 09	05 JUN 09	29 JUN 09	0
SS5300	S87-89	21	30 JUN 09	23 JUL 09	30 JUN 09	23 JUL 09	0
SS5310	S88-89	21	24 JUL 09	17 AUG 09	24 JUL 09	17 AUG 09	0
SS5320	S89-90	14	18 AUG 09	02 SEP 09	18 AUG 09	02 SEP 09	0
SS5330	S90-92	14	03 SEP 09	18 SEP 09	03 SEP 09	18 SEP 09	0
SS5340	S91-92	14	19 SEP 09	07 OCT 09	19 SEP 09	07 OCT 09	0
SS5350	S92-94	14	08 OCT 09	23 OCT 09	08 OCT 09	23 OCT 09	0
SS5360	S93-94	14	24 OCT 09	10 NOV 09	24 OCT 09	10 NOV 09	0
SS5370	S94-95	21	11 NOV 09	04 DEC 09	11 NOV 09	04 DEC 09	0
SS5380	S95-102	21	05 DEC 09	31 DEC 09	05 DEC 09	31 DEC 09	0
Others							
S78-S86 Incl removal of AC Pipe							
TH5389	Inspection Pit / Liaison with UU/ UU Diversion	60	18 MAY 09	28 JUL 09	18 MAY 09	28 JUL 09	0
TH5390	S78-79	21	29 JUL 09 *	21 AUG 09	29 JUL 09	21 AUG 09	0
TH5400	S79-81	21	22 AUG 09	15 SEP 09	22 AUG 09	15 SEP 09	0
TH5410	S80-81	12	16 SEP 09	29 SEP 09	16 SEP 09	29 SEP 09	0
TH5420	S81-83	14	30 SEP 09	17 OCT 09	30 SEP 09	17 OCT 09	0
TH5430	S82-83	14	19 OCT 09	04 NOV 09	19 OCT 09	04 NOV 09	0
TH5440	S83-84	14	05 NOV 09	20 NOV 09	05 NOV 09	20 NOV 09	0
TH5450	S84-85	14	21 NOV 09	07 DEC 09	21 NOV 09	07 DEC 09	0
TH5460	S85-86	10	08 DEC 09	18 DEC 09	08 DEC 09	18 DEC 09	0
Twin DN150 Rising Main							
TH5469	Inspection Pit / Liaison with UU/ UU Diversion	21	19 DEC 09	14 JAN 10	19 DEC 09	14 JAN 10	0
TH5470	PS1-81 (RM1)	60	15 JAN 10 *	25 MAR 10	15 JAN 10	25 MAR 10	0
TH5480	S75-PS1	21	26 MAR 10	19 APR 10	26 MAR 10	19 APR 10	0
S1-S15-S36 Incl removal of AC Pipe							



Start Date 31 JAN 08
Finish Date 19 APR 10

Page : 9A

△ Early start point	▲ Progress point
▽ Early finish point	▲ Critical point
Early bar	Summary point
Progress bar	Start milestone point
Critical bar	Finish milestone point
Summary bar	

DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 4

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02 MAY 08	Revision 1	SIL	KYS
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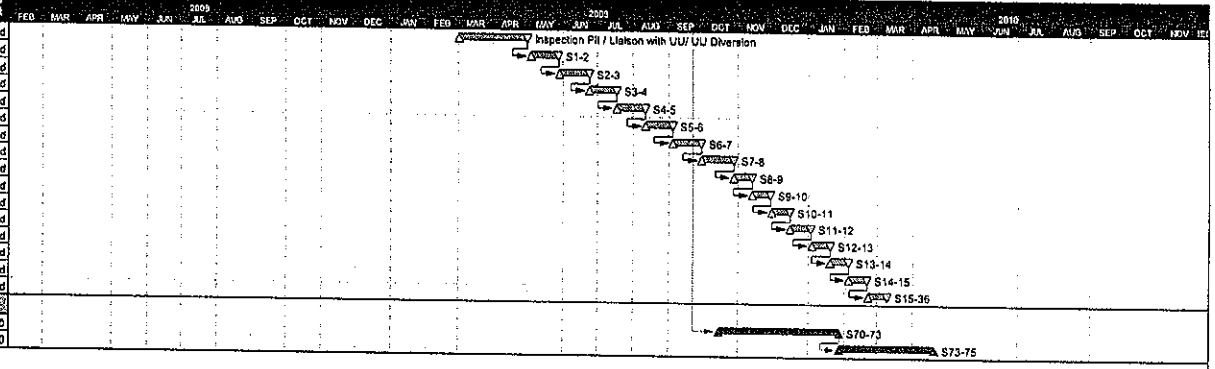
31 OCT 08	Revision 4	SIL	KYS

Act ID	Activity Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
CM5489	Inspection Pit / Liaison with UU/ UU Diversion	48	02 MAR 09	30 APR 09	24 MAR 09	25 MAY 09	19d
CM5490	S1-2	21	04 MAY 09	27 MAY 09	26 MAY 09	20 JUN 09	19d
CM5500	S2-3	21	29 MAY 09	23 JUN 09	22 JUN 09	15 JUL 09	19d
CM5510	S3-4	21	24 JUN 09	17 JUL 09	16 JUL 09	08 AUG 09	19d
CM5520	S4-5	21	18 JUL 09	11 AUG 09	10 AUG 09	02 SEP 09	19d
CM5530	S5-6	21	12 AUG 09	04 SEP 09	03 SEP 09	26 SEP 09	19d
CM5540	S6-7	21	05 SEP 09	29 SEP 09	28 SEP 09	23 OCT 09	19d
CM5550	S7-8	21	30 SEP 09	27 OCT 09	24 OCT 09	18 NOV 09	19d
CM5560	S8-9	14	28 OCT 09	12 NOV 09	19 NOV 09	04 DEC 09	19d
CM5570	S9-10	14	13 NOV 09	28 NOV 09	05 DEC 09	21 DEC 09	19d
CM5580	S10-11	14	30 NOV 09	15 DEC 09	22 DEC 09	08 JAN 10	19d
CM5590	S11-12	14	16 DEC 09	02 JAN 10	09 JAN 10	25 JAN 10	19d
CM5600	S12-13	14	04 JAN 10	19 JAN 10	26 JAN 10	10 FEB 10	19d
CM5610	S13-14	14	20 JAN 10	04 FEB 10	11 FEB 10	28 FEB 10	19d
CM5620	S14-15	14	05 FEB 10	20 FEB 10	27 FEB 10	15 MAR 10	19d
CM5630	S15-36	14	22 FEB 10	09 MAR 10	16 MAR 10	31 MAR 10	19d
S70-S75 (Trenchless)							
CM6250	S70-73	87	15 OCT 09	27 JAN 10	15 OCT 09	27 JAN 10	0
CM6260	S73-75	70	28 JAN 10	19 APR 10	28 JAN 10	19 APR 10	0



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Finish Date 19 APR 10

Page : 10A

Δ Early start point	▲ Progress point
▽ Early finish point	▲ Critical point
Early bar	Summary point
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31 OCT 08	Revision 4	SIL	KYS

Appendix G

Summary of Implementation Status of Mitigation Measures during Site Inspection

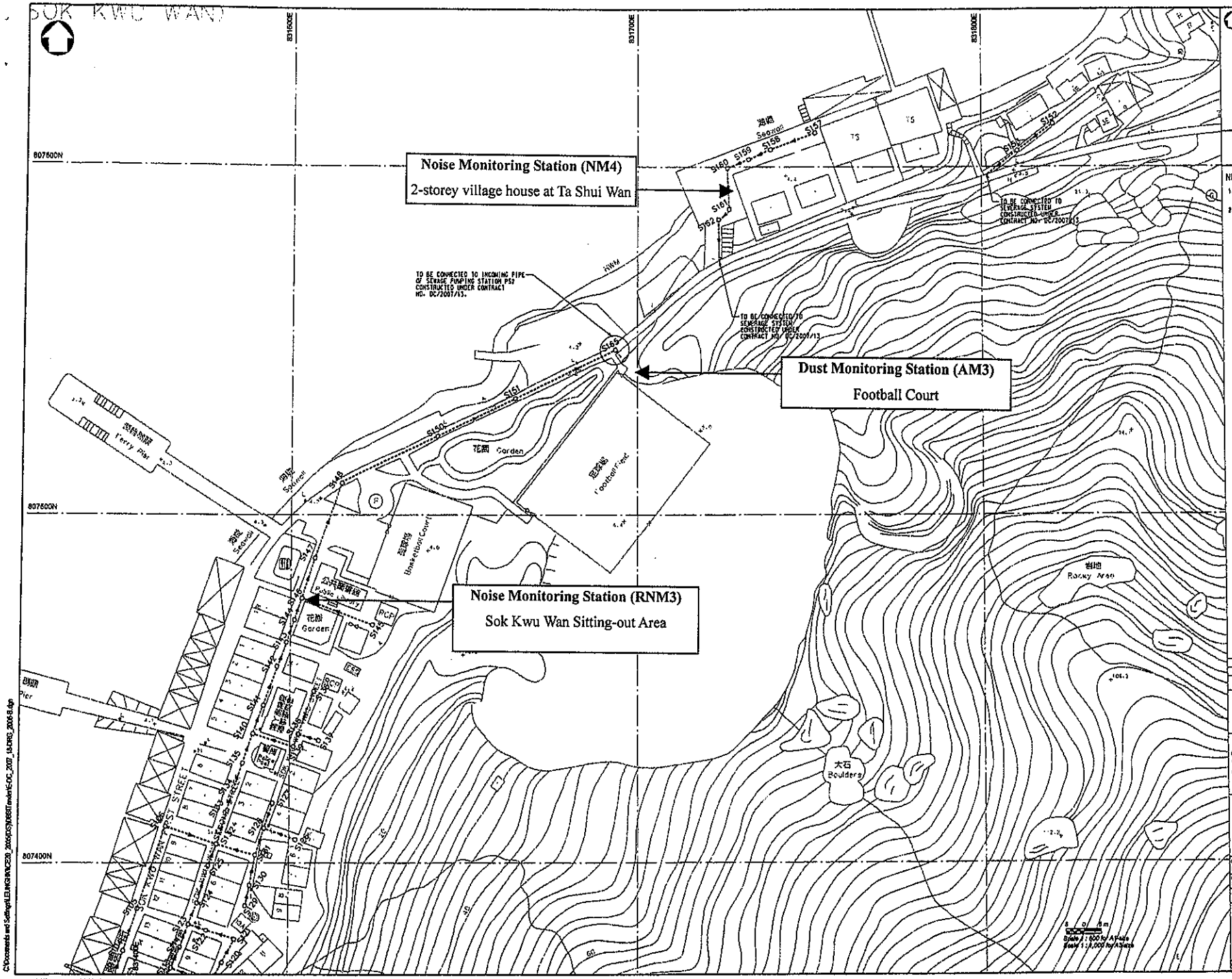
Environmental Mitigation Implementation Schedule

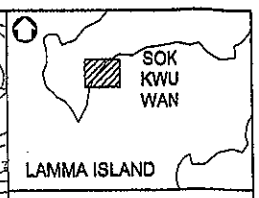
Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
▪ Stockpiles of imported material kept on site should be contained within hoarding, dampened and / or covered during dry and windy weather.	All areas		√		
6. Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses.	All areas	√			
▪ Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like.	All areas	√			
▪ Any vehicle used for moving sands, aggregates and construction waste should have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin.	All areas	√			
▪ Unpaved areas should be watered regularly to avoid dust generation.	Site Egress	√			
▪ The enclosures should be around the main dust-generating activities.	All areas	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	All areas	√			
▪ Open burning should be prohibited.	All areas	√			
Noise Impact					
▪ Quite powered mechanical equipment (PME) or method should be used.	All areas	√			
▪ The number plant should be restricted (1 item for each type of plant).	All areas	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	All areas	√			
▪ Mobile plant, if any, should be sited as far away from NSRs as possible.	All areas	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All areas	√			
▪ Plant known to emit noise strongly should be orientated so that the noise is directed away from nearby NSRs.	All areas	√			
▪ The constructions works should be scheduled to minimize noise nuisance.	All areas	√			
▪ Air compressors and hand held breakers should have noise labels.	All areas				√
▪ Compressors and generators should operate with door closed.	All areas	√			
Water Quality					
General Construction Works					
▪ Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal water and stormwater drains.	All areas		√		
▪ All fuel tanks and storage areas should be provided with locks and be sited on sealed area, within bunds of a capacity equal to 110% of the storage capacity of the largest tank.	All areas		√		
▪ Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Waste Management					
General Site Wastes					
• Appropriate measures, such as transporting wastes in enclosed containers, should be taken to minimize windblown litter and dust to nearby environment.	All areas	√			
• Sufficient waste disposal points and regular waste collection for disposal should be provided.	All areas	√			
• A collection area for construction site waste should be provided where waste can be stored prior to removal form site.	All areas	√			
• Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	All areas	√			
• Records of the quantities of waste generated, recycled and disposed should be kept and maintained.	All areas	√			
• Different types of waste should be segregated and stored in different container, skips or stockpiles to enhance reuse or recycling of material and their proper disposal.	All areas	√			
Chemical Wastes					
• After use, chemical waste should be handled according to the Code of Practice on the Package, Labelling and Storage of Chemical Wastes.	All areas	√			
• Any unused chemicals or those with remaining functional capacity should be recycled.	All areas	√			
• Waste should be properly stored on site within suitably designed containers and should be collected by an approved licensed waste collectors for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordnance.	All areas	√			
• Any service shop and minor maintenance facilities should be located on hard standing within a bunded area, and sumps and oil interceptors should be provided.	All areas	√			
• Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should be undertaken within the designated areas equipped control these discharges.	All areas	√			
Construction and Demolition (C&D) Wastes					
• C&D waste should be separated on site before disposal.	All areas	√			
• Inert material, such as concrete and rubble, should be re-used on site.	All areas	√			
• Steel and other metals should be separated for re-use and / or recycling prior to disposal of C&D material.	All areas	√			
Ecological Impact					
• Labelling and fencing of the uncommon tree species.	All areas	√			
• Avoidance of use of woodland habitats as Works Area, in particular where trees located.	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Landscape and Visual Impact					
• Existing trees should be retained.	All areas	√			
• Damage to vegetation should be minimized by close coordination and on site alignment adjusted of rising main and gravity sewer pipelines.	All areas	√			
• Short excavation and immediate backfilling section upon completion of works should be performed to reduce active site area.	All areas	√			
Site Practice					
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	All areas	√			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All areas	√			
• All generators, fuel and oil storage are within bundle areas.	All areas		√		
• Oil leakage from machinery, vehicle and plant should be prevented.	All areas	√			
• The Environmental Permit should be displaced conspicuously on site.	All areas	√			

Figures





KEY PLAN

NOTES :

1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 2005/C1/2005.
2. THE CONTRACTOR BE RESPONSIBLE FOR LIAISE WITH THE CONTRACTOR UNDER CONTRACT NO. DC/2007/13 FOR ANY INTERFACING ISSUE OF THEIR WORKS.

Rev. 修訂	Date 日期	Description 說明	Drawn 繪圖	Checked 審核
B	JAN/06	ISSUE FOR CONSTRUCTION	JL	WS
A	SEP/05	TENDER SUBMISSION	JL	WS

The Government of the Hong Kong Special Administrative Region
Drainage Services Department

CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS

VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU WAN (SHEET 3 OF 3)

Drawing No. 圖號	2005/C1/2006		
Designed 設計 CL	Drawn 繪圖 JL	Checked 審核 WS	Scale 比例 AS SHOWN
Approved 批准 PC		Date 日期 06/2007	Revision 修訂

Scott Wilson CDM
SCOTT WILSON CDM JOINT VENTURE

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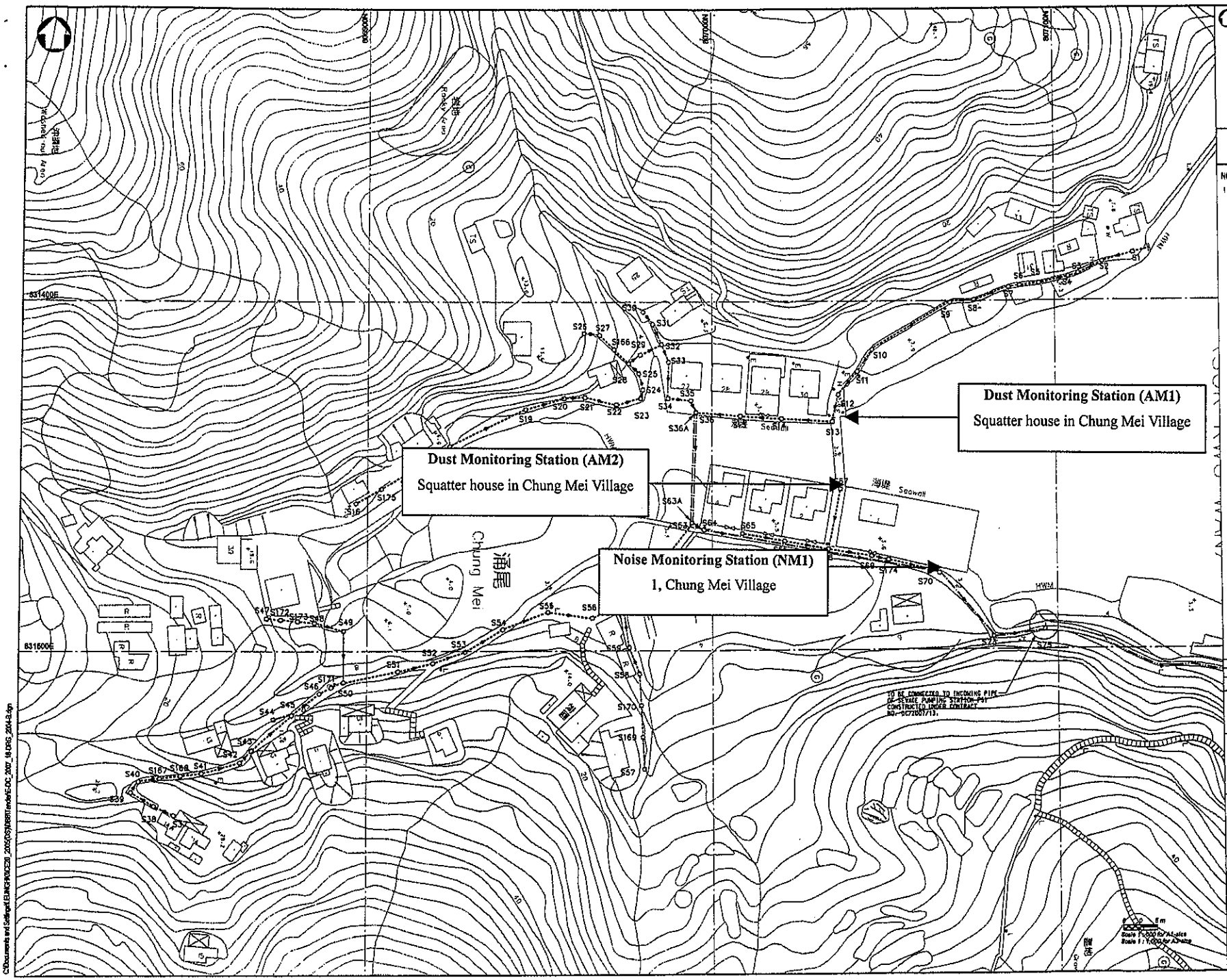

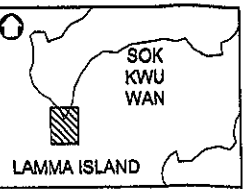

KEY PLAN

NOTES :

1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 2005/C1/2001.

Rev.	Date	Description	Drawn	Checked
B	JAN/08	ISSUE FOR CONSTRUCTION	JL	MS
A	SEP/07	TENDER SUBMISSION	JL	MS

The Government of the Hong Kong Special Administrative Region
Drainage Services Department

CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN
VILLAGE SEWERAGE, STAGE 1 WORKS

VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU WAN (SHEET 1 OF 3)

Drawing No.	2005/C1/2004				
Designed EL	Drawn JL	Checked MS	Scale AS SHOWN		
Approved PC	Date 06/2007	Status			

Scott Wilson CDM
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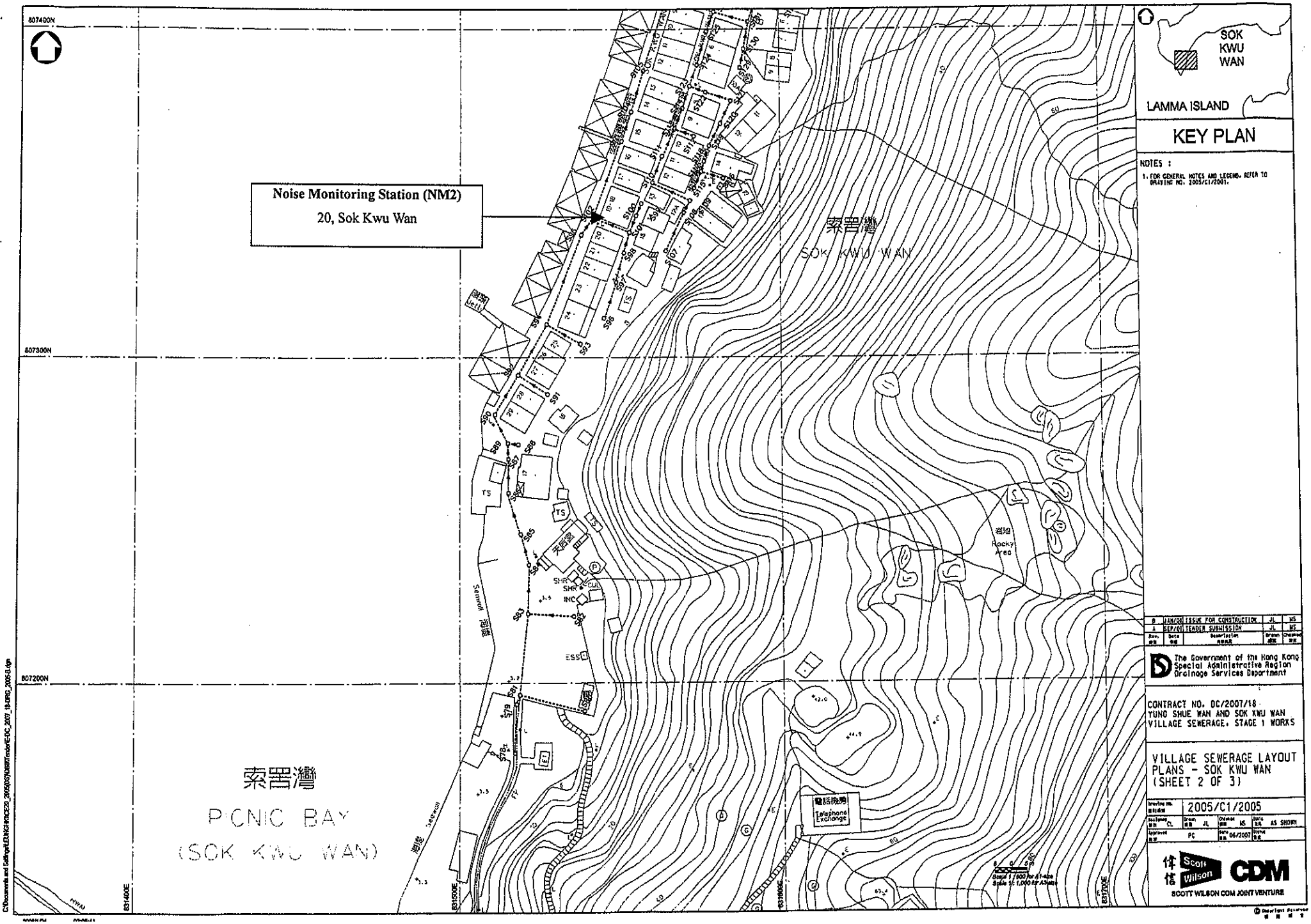
Noise Monitoring Station (NM2)
20, Sok Kwu Wan
SOK KWU WAN
索罟灣
PICNIC BAY
(SOK KWU WAN)
Telephone Exchange
Rocky Area
SOK KWU WAN
LAMMA ISLAND
KEY PLAN
NOTES :
1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 2005/C1/2001.
B JAN/08 ISSUE FOR CONSTRUCTION JL MS
A SEP/01 TENDER SUBMISSION JL MS
The Government of the Hong Kong Special Administrative Region
Drainage Services Department
CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS
VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU WAN (SHEET 2 OF 3)
2005/C1/2005
CL JL MS AS SHOWN
PC 06/2007
Scott Wilson CDM
SCOTT WILSON CDM JOINT VENTURE